THE

DIETETIC AND HYGIENIC GAZETTE

A Monthly Journal of Individual and Public Health.

EDITED BY JOHN B. HUBER, A.M., M.D.

Vol. XXX. JUNE, 1914 No. VI

EDITORIALS.

HOT WEATHER HYGIENE.

PERHAPS the most vital of all summer-time subjects is milk; and a most authoritative article on this subject by Dr. Popper is contained in this number of The GAZETTE. Impurity of milk is one of the greatest factors in the large infant mortality. Breast fed infants almost never suffer summer complaints and dysenteries; these diseases come largely from cow's milk, either impure or improperly prepared and this mortality can be largely avoided—is indeed summer after summer being progressively diminished. A mother said to a great physician that it had pleased Providence to take her baby from her; he rejoined that it was most unfair to blame that death upon Providence; Providence had really nothing at all to do with the matter. It was bad milk killed that mother's baby; and the death could have been prevented by the exercise of cleanliness and common sense. So municipal authorities, aided most nobly by unofficial philanthropy, have been accomplishing vast improvement in our milk supplies. Pasteurization, the process which Mr. Straus has fought so hard through years to get established, is now likely to become the process universally required for rendering milk a safe fluid. Large dairy concerns now serve their milk pasteurized, or pasteurization can be done in the home by means of the Straus Home Pasteurizer. This consists essentially of three parts: a can, a rack to hold the bottles of milk and a top for the can. The bottles are filled to the neck, the patent corks are snapped on and then the bottles are placed in the rack. The rack is then so placed in the can as to be supported by three projections on the inside of the can. Boiling water is then poured into the can until it reaches a certain mark just below the bottoms of the bottles. The covers are then placed on the can and the bottles are left in this position for five minutes to heat them through. When five minutes have passed, the cover is taken off, the rack is given a half turn so that it is no longer supported by the projections on the insides of the can, and it sinks slowly to the bottom of the can. The cover is then replaced. It is advisable to perform this operation as rapidly as possible. The whole is then allowed to stand for twenty-five minutes, when the cover is removed, the rack lifted out, the hot water partially emptied, and cold water poured into the can in its place. When the bottles are cool enough so that they will not be cracked by contact with ice, ice is added to chill them as thoroughly and quickly as possible. Pasteurization is thus accomplished with a degree of exactness almost unbelievable unless one has seen the experiment with the thermometer. For the first five minutes that the bottles rest in the water the milk reaches a temperature of 157 F. it then remains at exactly this temperature without variation of more than two degrees for the remaining twenty minutes that the bottles are in the hot water. The cost of this contrivance is nominal, about a dollar and fifty cents.

DIET AND DRINKING.

COMMON sense as to eating oozes out of a good many people along with their perspiration in hot weather. One must take nourishment in the summer though not so heartily as in the cold months. And some of the things eaten in winter must be eschewed (no pun intended) during the dog days—the Bingo frankfurter, for example. The food must be of the kind it takes least energy to digest. Energy makes heat, in the body as elsewhere. And eat lightly; no gourmandizing; hunger can always be satisfied if necessary by a glass of cool milk with bread or crackers between meals. Don't nibble; and keep away from the sundae emporium. Never eat when tired or hot; dine if possible in the evening when work is over and when there is comparative coolness. Here are some blood refrigerating fruits: fresh juicy grapes, oranges, lemons and limes in lemonade, cantaloupe, watermelons, (but not in excess, lest there be those meloncolic days of the poet) rhubarb, peaches, cherries, berries, apples, pineapples, pears; be most careful of unripe or overripe fruit. And there are leafy or fibrous vegetables that tend to the same thing; tomatoes, celery, spinach, asparagus, lettuce, beets, onions, (besides, in onion there is strength); all green salads also—endive, chicory romaine, watercress, tomato, lettuce, vegetable. The right summer foods are: thin soups or better, cold bouillon; fresh fish or fowl; roasted or broiled beef, mutton or lamb in moderation (once a day suffices for hot weather); eggs soft boiled, scrambled, or lightly fried (but none of your fried both sides, coated with a layer of fat impenetrable by the gastric juice, near-leather article); simple desserts of gelatine, custard, ices and ice cream. Cut out entirely or go very slow on thick soups, canned meats, spices and condiments, nuts, beans, oils, cheese, bananas, dates, preserves; hot drinks, ice cream sodas and alcoholics do not quench thirst. Drink water freely at meals; copiously between meals. Chocolates and sweets had best be avoided. If the object of a young man's adoration is strong for candies let him explain to her that candies are mostly carbon, the same as coal; and how blighted his existence would be should she be utterly consumed by that kind of fuel being ingested.

SUMMER SNEEZES.

WE have colds all the year round—winter colds, the "cub gedle Sprig" kind, summer colds and hay fever. The temperature of the air has very little to do with catching cold except as it lowers the bodily resistance. And extreme heat can do that as well as cold can. In the summer the change may be great within a few hours; it has been ninety in the morning and near freezing toward evening. The predisposed condition of the body plus germs are what result in colds. At sea or by the seashore one seldom catches cold. Arctic explorers never catch cold while they are at or near the Poles; but they are as likely as anybody to do so when they return to civilization, where the germs are. The cold air treatment is the ideal one for consumptives, who get well more surely in the winter than in the summer time. The common cold is usually an infection—that is, the germs from a sneezing, spitting, coughing victim are distributed through the air, or by the dust laden breezes; and predisposed (run down) people breathe them in and then "catch cold." Summer colds are the meanest of all because they make you and everyone else so uncomfortable, and are so hard to get rid of. People are sympathetic when you have a winter cold; in summer they are resentful because you are making what seems to be an unreasonable nuisance of yourself. You begin with sneezing; your nose is stopped up and you speak thick; headache, chill and fever follow; then pains in the back, heaviness in the bones, and that tired feeling—all of which, being interpreted, means that the germs are having a hot old time throughout your internal relations. If you feel this way make an anchorite of yourself until your snuffles are over. Why? Good old Ben Franklin could have told you why a century and a half ago; he sensed that people caught colds from one another—that germs play their parts in most colds, although he could not see the germs under the microscope as we do to-day.

HOT SPELLS.

During and after a hot spell the press relates how many people have succumbed; but it does not tell of the much higher mortality indirectly attributable to this dreadful temperature—the deaths from "heart failure," kidney and liver disease, dysentery and so forth, which would otherwise surely not have occurred. In one respect the high temperature in our latitudes affects us more disastrously than it does people in the torrid zone, because they are occasional, whilst the tropical temperature is equably high. Those living within the tropics expect heat, and prepare themselves accordingly; we on the other hand adjust ourselves to what the geographers with somewhat grim humor term our "temperate zone," when the morning after an almost frigid day we are all of a sudden caught in a descent of humid heat that would make the visitor from India among us "sigh for Calcutta." An English diplomat stationed at Washington once found a June temperature that very nearly "did for him" and wrote home that "one quart of the American summer climate would thaw out all Europe."

HEAT EXHAUSTION AND SUN-STROKE.

Here are two entirely different ways in which the body succumbs to overpowering heat. And the distinction is important because the treatment differs most radically. The patient with heat exhaustion is prostrated, his skin is cool or cold and clammy; his muscles are relaxed; his pulse small and frequent; his temperature below the normal. Wherefore he must be stimulated, with aromatic spirits of ammonia, till the doctor comes; a warm bath and hot water bottles to his feet—but no ice. Sunstroke (heat stroke or thermic fever) comes about generally through severe exertion whilst exposed directly to the sun or to high temperatures, as with tennis players or firemen. Alcoholics are very prone. In severe cases the victim falls unconscious and may die at once or after a few hours of coma and snoring respiration. Or he may speak of colored or indistinct vision; sudden arrest of perspiration and headache; then he will all of a sudden become dizzy, nauseated, vomiting, unconscious, with face flushed, skin dry and hot, pupils perhaps dilated, muscular spasm or convulsions, temperature perhaps as high as the clinical thermometer will indicate, a quick and bounding pulse, and breathing deep and labored. Put such a patient in as cool a place as possible, till the doctor comes, sponge and sprinkle him with ice water or rub him with ice. People who have had strokes must take no chances, especially cutting out alcohol.

CLOTHING.

Visitors from the East and from south of the Tropic of Cancer tell us that we do not wear rational clothing during the heated term. Americans in Manila will dress in cool clothing and be comfortable; whilst at home they gasp, perspire and disintegrate, both physically and as to temper, in clothing that has no relation whatever to the thermometer. Why do we not naturally go over to tropic garb whilst our weather is tropical; why not, like the revered Mark Twain, go about in white samite, though we may none of us ever hope to appear as "mystic and wonderful" as he was. One potent reason for this latter unwisdom is of course our slavery to custom. Another is that just intimated: should we to-day don linen and duck we would like as not to-morrow need an overcoat, and need it badly. In every heated term we are expecting that tomorrow, or very likely the next day, but very positively the day after that, we shall

have it quite cool again. Thus like our climate and our politics, our notions about hot weather dress are a good deal mixed. Nevertheless we have of recent years made marked advances in common sense summer dressing. Only the colored clergyman wears a high hat and a frock coat on a hot day these times. The shirt waists of the women seem always cool, as certainly their wearers are comely in them. Nobody objects to them on the score of propriety, as why should any one, but for men to go about without coats is decried as highly improper; yet why there should be any objection to a man trimly shirted and his trousers well belted. Even an ornery looking citizen might hope to appear handsome that way. And why should men go hatted either. Away with hats in the summer time except in the intense sunshine; if this becomes the custom a whole lot of baldness is likely to go the same way.

HOW TO TAKE A VACATION.

People should take their vacations according to their temperaments. A business man whose mind and body are naturally active, to whom excitement has been meat and drink, will get harm rather than benefit from "resting for a change," doing absolutely nothing but eating, sleeping, and twiddling his thumbs for hours together on a hotel porch. Innocuous desuetude will not, cannot recreate him; for the activities over which he has become wearied other and diverse—though not strenuous ones—must be substituted. Golf, rowing, walking, motoring, sailing (with the tonics and the Broadway bracers all cut out) will rejuvenate such an one. Another mistake, and a graver one, is to expect a party past middle life, whose habits throughout many years have been sedentary, to go in for violent exercise; such a course has been known to prove fatal, or at least to hasten a fatal issue. Give that kind of a man a grassy bank by a pretty stream, a pole and reel in his hand, or an interesting book to raise his eyes from now and then. Anyway, all exercises must be carefully graded. The man who has never before played golf must not try for eighteen holes the first day; a few holes must suffice in the beginning, with resting between drives. On a walking trip no more than five miles the first day; ten the next; at the end of the week any old mountain or a jaunt from sunrise to twilight will be safe. And in exercising the body the mind should also be refreshed and cleared of its cobwebs. In considering the effect of exercise on the nervous system we find that different occupations make a call on the energy of different areas in the brain; so we must try to rest the areas used in the daily routine, and to bring into function different areas.

VACCINATION AGAINST TYPHOID FEVER.

The use of a typhoid vaccine will prevent this disease. In war typhoid fever has ever been far deadlier than the enemies' weapons; but the vaccinating of soldiers against it has rendered them almost entirely immune. German and English military camps have become practically free of typhoid fever; and this is becoming so in ours, now that vaccination is compulsory among regular American troops. This fever is contracted only through whatever is taken—food and drink—into our mouths. It is mostly a water borne infection, and next in frequency milk borne. When the antityphoid inoculations are made in the afternoon all untoward sensations are likely to have disappeared by the following noon; successive inoculations are made a week apart. Especially should they be submitted to by travelling business men, who may in the most insidious ways contract typhoid. Here is peculiarly a disease of youth and early manhood and womanhood. It would be well for those young men and women who go to college and boarding school to submit to this preventive measure before leaving home. Tourists and vacationists

should be vaccinated against typhoid. They may not only themselves get typhoid; but they may also become "typhoid carriers," introducing the germ into communities hitherto exempt. Indeed, there are carriers and distributers of the germ who have not themselves suffered the disease of which it is the essential and specific cause. It is considered that the protection is effective for two years and that the one inoculation may indeed afford complete immunity for many years, if not for life.

THE TYPHOID FLY.

We have typhoid fever with us more or less all the year around; but the greatest mortality is in the Fall; hence doctors speak of it as the autumnal disease. It was formerly thought that city people going for their holiday contracted typhoid from the wells and from the impure milk they got in country boarding houses. Unquestionably the old oaken bucket, the babbling brook and the rustic dairy have oftentimes been to blame; and vigilance concerning them should be abated not one jot. But we have been learning a great deal about flies; and have become convinced that many an urbanite has contracted his typhoid before ever he went into the country; as also many a tourist and motorist who has perhaps unjustly blamed the country hotel. Count back two months from the Fall rise in the typhoid death rate and you will begin with flytime—when this insect flourishes most luxuriantly. Your fly is the most congenial mixer in the cosmos; in this respect there never was a congressman that could come anywhere near him. It's all one to the fly: he visits indiscriminately the manure heap (95 per cent. of him are born there), the privy, the spittoon, the dead quadruped in the public thoroughfare, the chamber of a typhoid patient; and in such way is likely to get thoroughly saturated with typhoid germs; then he alights on unprotected vegetables, meats and fruits; and so goes through your unscreened windows and kitchen doors to your sugar bowl, your milk pitcher and your baby's nipple. Now, the incubation period (when one has contracted typhoid and doesn't realize he has the disease) is about a fortnight. This period is likely to tally with that of the greatest fly prevalence. Typhoid fever, from beginning to end lasts about two months: two weeks incubation; four weeks of about as miserable sickness as there is; and two weeks more (longer indeed, if there is a relapse) before we can say convalescence is really on. And then September or October is reached. The lesson here is obvious; there is little use in swatting the fly—starve him; separate him absolutely from his provender, if you want to make this filthy creature extinct. How is this to be done? That is a story all by itself; and it would tell also of other diseases disseminated by flies—tuberculosis, the summer complaints of infants (which make the dreadful mortality among them), scarlet fever, diphtheria, granular lids, cerebro-spinal meningitis, leprosy, plague, carbuncle, lockjaw, smallpox, rabies and so forth.

MOSQUITO EXTERMINATION.

Many a community has failed in its efforts for mosquito extermination and has given up in disgust—with rage toward those false medical teachers; the reason for this has almost invariably been that somewhere some breeding place has been ignored as too trifling for consideration. A single negligent householder has thus frustrated the zeal of a whole neighborhood. All breeding places within the radius of a mile if possible, must be drained or filled in with earth or oiled. The only means whereby mosquitoes can be permanently vanquished is the destruction of their breeding places, which may be anywhere that water can accumulate and stand for ten days or more. Only in stagnant water is there breeding. It is excellent to drain marshes, pools, springs, ponds, fountains and wet places in lawns and gardens; but extermination will not be thorough and effective unless one realizes that no body of water, not even a teaspoonful, can be too small for a mosquito nursery, expecially if grass and algæ

abound in and about it. Myriads may breed in water puddles by the roadside; in little used watering troughs; chicken pans; poultry yards; water cups standing on the frames of grindstones; water accumulations in garden furroughs or in fields; moist, mossy and especially clayey soils; any tree notch hollow or pocket; footprints of animals in marshy lands or along the road; irrigation ditches and excavations; drains and gutters choked with grass or weeds; defective roof and lane gutters; old boats along water front; hollow in rocks; beds of old canals; wherever there is green scum; the backwaters of even rapid streams; pools by the sides of open streams; earthenware vessels; water barrels and tubs; cesspools or disused wells; beer or soda water bottles, broken or otherwise; the water tank of an acetylene gas machine; fragments of broken glass put on the tops of walls to keep cats and small boys off the premises; water pitchers in unused guest-rooms; vases in which water has not frequently been changed; discarded tin cans in back yards; the old oaken bucket; fire buckets; refuse thrown on the dump heap; in water under old stones or in moist collections of decayed leaves; sewer catch basins; mud pools in vacant lots; shallow ponds with dirty edges. A large brood may be hatched in a puddle that may evaporate within a fortnight. Or eggs or wrigglers may lie dormant in moist earth, to develop into mosquitohood when a shower renews the water; this fact may in a measure account for the sudden appearance of swarms of mosquitoes after a heavy and prolonged rainfall. Depressions that hold water temporarily may go unnoticed in the surrounding high grass. A single female may of a night deposit several hundred eggs, massed and floating raft-like, in a tiny rain-water puddle. The little rain-water pools on the rocks by the seashore must not be forgotten.

Drinking places for chickens should be emptied daily, old unused wells should be filled in; cesspools should be dosed at least weekly with kerosene. Fountains should be kept pure-watered. It would be well to introduce gold fish, minnows, sticklebacks, sunfish, "millions" or other fish to which wrigglers are delicious tidbits. Water barrels and roof tanks must be screened. There are metal, knapsack-like sprinklers from which oil can be projected many yards; this is carried on the back. Or an ordinary garden sprinkling pot may be used.

Since mosquitoes breed only in standing water; to eliminate them requires simply to find and to drain or spray with oil all the possible mosquito haunts. The best kind of oil is crude petroleum or the common fuel oil; or Phinotas oil (which may be had in the drug store) can be used. One ounce of kerosene will cover 15 square feet of water surface, and will remain effective ten days. The wind may blow this oil aside; but it will generally seek its level again when the wind changes. And though eggs may have been deposited in the meantime the return of the oil will kill the new larvæ. In thoroughness lies the whole secret to success.

OTHER INSECT GERM SPONGES.

And while attending to the fly's and the mosquito's business settle that of other insect carriers. Look out for the common stable fly which conveys to little children the germ of infantile paralysis. Then there is the insect with the imperial name of *pediculus capitis vel vestimentorum,* in plain English the louse, which has been known to convey to human hosts the germ of typhoid and of relapsing fever. And that polecat among insects, the bedbug, which has done the same for smallpox, relapsing fever and typhoid fever, and no doubt also other diseases. And the flea, a carrier of the germs of typhus fever, typhoid, consumption, leprosy and plague. The roach, too, has performed the kindly office of intermediary. You can get rid of pretty much all these pests by cultivating in the home centipedes and like creatures which kill and eat them. But if you prefer to do something radical write to the Bureau of Entomology, in the Department of Agriculture, Washington, D. C., and you will get practical, succinct and altogether adequate directions how to act.

ORIGINAL ARTICLES.

SOME SURGICAL ASPECTS OF INDIGESTION AND DYSPEPSIA.*

By Parker Syms, M. D., F. A. C. S.

To have an intelligent idea of this subject it is necessary to form in our minds some conception of what we understand to be normal digestion.

By normal digestion we mean the result of those processes whereby food is taken into the body, and is so changed that the elements essential for nourishment and regeneration of tissues are prepared by chemical and mechanical agents for absorption and assimilation. If this be perfectly accomplished, it means that the important elements are separated from the unimportant, those that are needed being taken into the system and those that are not useful or essential being discarded. The organs which perform digestion may be said to constitute a very complete mechanico-chemical laboratory in which the good is changed physically and chemically. These organs are very complex and the process itself is one made up of many elements. The mind and the imagination play an important role, for the process of digestion begins before food is actually taken into the body; the thought of food, the sight of food, the smell of food, act as normal and potent stimuli to set in motion the train of functions which are about to be called upon. So that when food has been placed in the mouth the important glands and organs not only of that region but of the stomach and small intestines have been more than warned and prepared;—they have actually been set in motion. The saying that the sight of food or the thought of food makes the mouth water is not a figure of speech,—it is a fact. In the mouth begins the actual function of preparing the food for digestion; by the teeth it is ground into a pulp-like mass; by the salivary gland it is moistened and mascerated and by the mucous glands it is rendered pultaceous and viscid, so as to be more or less held together in masses suitable for swallowing. Next comes the process of swallowing. This is accomplished by a rhythmical motion of the muscles of the œsophagus or gullet. These muscles act in concert and in unison in such a way as to grasp the food and force it gently but surely into the stomach. Having reached the stomach, the food is further moistened and softened by certain juices of that organ; and other juices of the stomach exert a direct and definite chemical action on certain elements of food whereby they are made ready for the next step in the process.

While the food is in the stomach it is subjected to constant agitation being actively stirred and mixed with the physiological elements which have been added to it, namely the saliva, and the various forms of gastric juice, and is subjected to the chemical action of the elements of these juices, such as ptyalin-pepsin, hydro chloric acid, etc. Having been thoroughly mixed and stirred in the stomach and brought sufficiently in contact with the juices with which it is mixed, the food now reaches the lower end of the stomach, the pylorus, and by proper rhythmic motion of the muscles of that portion of the stomach masses of food are passed from the stomach into the duodenum—the highest portion of the small intestine. Within the duodenum the food comes in contact with another set of juices, each one of which is essential to digestion. By a common duct or canal there is poured into the duodenum the bile from the liver and the pancreatic juice from the pancreas. And there are numerous glands within the structure of the small intestine itself which contribute their chemical agents.

Digestion is not completed within the stomach as was at one time thought. Digestion is a progressive process; it is begun

*One of the series of lectures delivered under the Auspices of the Social Service Department of the Lebanon Hospital, in the Bronx Borough, New York City. 1913-4.

within the mouth, it is continued within the stomach, and it is continued and completed within the small intestine. Absorption, or the taking up into the system, of digested food, takes place almost entirely within the lower end of the small intestine and within the upper portion of the large intestine. The stomach is not an organ of absorption. Within the large intestine the final separation of the good from the bad, the useful from the useless, has taken place, and nothing remains but that which is to be discarded.

Even from this brief and incomplete description of digestion, one may readily see that it is a very complex process, and that it depends for its proper performance upon the concerted action of a large number and of a great variety of healthy organs. It depends upon nerve impulses, upon muscular action, and chemical reaction, each one in its proper place, each one in its proper time, and each one in its proper relation to each other. In other words, digestion cannot be complete and satisfactory if there is any break in the chain. It is just as essential that food should be properly chewed and properly mascerated within the mouth as it is that it should be properly mixed with gastric juice within the stomach. It is just as essential that the food should be kept in motion and thus be thoroughly stirred within the stomach and not too long retained within the stomach and not expelled from the stomach too soon as is any other part of this complex process. Also of equal importance is the constituent composition of the various chemical mixtures. In other words, we must have pure, healthy saliva and gastric juice, pancreatic juice, etc. This is a chemical shop in which something "just as good" will not do. The laws forbid it, the laws of physiology and the laws of life, and these are laws that are always enforced, and from which there is no appeal. Of course, extraneous circumstances may exert a powerful influence on a function like digestion. Fatigue, fear, grief, worry, over-anxiety, will all play their parts in disturbing and interfering with the proper action of such delicate organs as those which are involved in the processes of digestion. Bad food, bad cooking, and bad habits of eating all play their part. Personal idiosyncrasies must be taken into account, some individuals being unable to digest certain articles of diet which can be easily digested by others.

Notwithstanding the apparent complexity of the processes of digestion they constitute a perfectly normal function and one which should occasion us no surprise; it is one with which we should all be familiar, and our surprise should be at the inability of an individual to perform this ordinary every-day function. In other words, a healthy individual in normal circumstances and environment, with good and wholesome food to eat, should be able to digest this food and not be like Carlyle, that hero of dyspepsia of whom it was said, "Every meal was a drama and every digestion was a tragedy."

Recognizing as we do that normal digestion can only be carried on in a healthy individual, who has organs capable of normal function, we should realize that the converse of the proposition is true. We should be quick to recognize the significance of indigestion, we should be ready to realize what indigestion means. Indigestion should at once suggest to us an unhealthy individual; it should suggest to us the fact that one or more than one of his organs may be diseased. Structure and function bear a very close relation to each other. We should not expect a healthy structure to be guilty of an abnormal function.

This brings us pretty close to the real subject of this discussion, namely, to the surgical aspect of indigestion.

A surgeon should be an idealist, his aims should be high. We should not be content to treat but not cure indigestion. Given a case of indigestion, we should seek the cause, we should remove it, we should restore the sufferer to health. Any functional disturbance of digestion, that is to say a disturbance of function not dependent upon a mechanical lesion within an organ, should be capable of remedy and regulation by careful attention to hygienic rules, such as proper rest, freedom from worry, proper habits of thought, proper food to eat, proper manner of eating. One should not eat too fast, one should properly chew his food, one should not dissipate and waste his energies in chewing gum, not only because of the indecency of the performance but also because the salivary glands should be reserved for their important role in the function of digestion.

Given a case of indigestion in which every attempt to regulate the functional disturbance has been without success, one should turn his thoughts and attention to the dis-

covery of its cause in actual structural disease of one or more of the important organs involved. In other words, we should follow the advice of Sherlock Holmes, "having looked for all the improbabilities we should look at some of the probabilities. Many cases of chronic indigestion and dyspepsia are caused by an actual disease of one or more of the important organs which normally take part in the process of digestion. The principal causes of indigestion in this connection are chronic appendicitis, gall stones, and ulcer of the stomach.

We all know what great advances have been made in surgery since the days of antiseptics and especially during the more modern era of asepsis or clean surgery. The most important knowledge that we have gained concerning the normal and the abnormal anatomy and physiology of the abdominal organs has been obtained at the operating table within the last ten years. Prior to that time our supposed knowledge had consisted of conjecture and illogical conclusions based upon imagination. By modern surgery we have been placed in a position to know very accurately, and as the world famous surgeon Mayo has aptly expressed it, "Surgical invasion of the upper abdominal region has gradually enabled us to replace theory with facts, and fallacious clinical observations have given way to actual demonstration."

There is a very close association and corelation between the stomach, the small intestine, the liver with its bile ducts, and the pancreas. This is true embryologically, physiologically, and pathologically. There is such a close association in the functions of these various organs that one is more or less dependent on the other, for the proper performance of its duties. It is also true that disease of one of these organs may produce a train of symptoms very similar to the symptoms produced by disease of another of this group. For instance, symptoms of disturbance of the function of the stomach may be produced by a chronic appendicitis, or by a chronic disease of the bile passages. But there are certain symptoms which taken collectively or separately, should suggest to us the fact that there is either a chronic appendicitis, an ulcer of the stomach or duodenum, or chronic disease of the bile passages, usually in the form of gall stones. If a patient with these symptoms is a sufferer from one of these diseases, his relief will be found in surgery and in surgery alone. This is positively true of chronic appendicitis and of gall stone disease; it is nearly always true of duodenal and of gastric ulcer, but of course there are cases of ulcer which may be permanently cured by hygienic treatment

The point I wish to make is that every case of chronic indigestion and dyspepsia has a cause; that the cause should be sought and removed; that the patient should be cured. Indigestion and dyspepsia are but symptoms, they are not diseases. In themselves they are annoying and uncomfortable, but of themselves they are not dangerous nor disastrous, but the disease of which they are the symptoms is often dangerous and should always be cured if cure can be accomplished with reasonable safety.

While patients do not die of indigestion, per se, they may die from the disease of which indigestion is the symptom. But we may go further than that and say that in the majority of cases which are fatal owing to some disease which produces indigestion, death is not due to that disease itself, but is more often due to some complication or to some secondary disease which has been induced and made possible by the lack of nutrition, and the lack of resistance power which is always present in a sufferer from a chronic indigestion. How often is this true of tuberculosis. Think of those friends and relatives whom you have lost, and see how many died of some such disease as consumption which has been preceded for many months or years by some form of chronic indigestion which has sapped the strength of the individual, so that he or she has become a prey to this ever prevalent infection.

Of course, in a large proportion of cases, indigestion is the result of purely functional disturbances, or of acquired tendencies, and of course the majority of cases of indigestion are not due to a direct and classic lesion in one of the important organs of the digestive tract, but our increasing knowledge is ever taking away from the lists such functional disorders as the so-called nervous dyspepsia, etc., and we are learning to place them where they properly belong, for we are learning more and more of the actual diseases of the alimentary tract.

This is a big subject and we must omit a great deal, so we shall hasten at once to the consideration of some of the surgical

aspects of indigestion, and for illustrations I shall take the three diseases which are the cause of most of the cases of chronic indigestion, always excepting those cases which are purely due to functional disturbances or which are secondary to some other disease, such as Bright's disease, heart disease, etc. The three surgical diseases to which I shall call your attention, are, (a) chronic appendicitis, (b) gall stones and disease of the bile system, and (c) gastric and duodenal ulcer.

Before going into the details of each of these diseases, let me enumerate certain symptoms which are common to all of them. These symptoms are: pain, abdominal discomfort, a sense of distension, tenderness on pressure, eructations of gas, eructations of acid or sour fluid, and vomiting. Of course added to these we have lack of nutrition and emaciation in many of these patients, and nervousness and neurasthenia.

It is not necessary for our present purpose to go minutely into a description of the symptomatology of indigestion. In a broad sense it is sufficient that we recognize the fact that normal digestion is performed without symptoms, and that any of the above symptoms must be indications of an abnormal process. *Pain* is due to distension of one of the organs, with stretching of the nerves or to colicky spasmodic contraction, when it is manifested in the form of cramps. In cases of chronic indigestion, pain is not usually severe. Of course it is a very different matter when we come to an acute destructive disease such as acute appendicitis, acute perforative peritonitis, etc. Abdominal discomfort and the sense of distension are usually due to actual distension of the stomach and intestine by gas, the result of fermentation. This distension by gas may be quite localized to one portion of the intestine, due not only to fermentation but also to sluggishness of the bowel with more or less stagnation of its contents.

Tenderness on pressure is an important symptom, and it usually means what it suggests, namely a sore or an inflamed tissue in the region where the tenderness exists. Eructation or belching up of gas of course means that there is an undue amount of gas in the stomach. Eructation of acid or sour fluid from the stomach of course means an irritability of the stomach and an excess of gastric juice and usually means an excessive acidity of the gastric juice. Excessive acidity, or hyperacidity, is a very important condition and one that has been completely misconstrued until recent years. It produces many symptoms of stomach trouble, such as some of those which have just been enumerated, and it also produces spasm of the muscles at the outlet of the stomach, resulting in a retardation in the flow of its contents from the stomach to the duodenum. It will also result in actual inflammation of the stomach, going on to eroson or ulceration. Until recently it was thought to be due always to some disease of the stomach, but now we know that in the majority of instances it is due to chronic appendicitis or to diseases of the bile ducts. *Most cases of hyperacidity are due to chronic appendicitis.* Vomiting is a complex act more or less reflex in its character. It may be due to the presence within the stomach of irritating and incompatible substances, such as undigested and fermenting food, or some other form of emetic, but very often it is entirely reflex, and is due to nerve irritation, the result of disease in some other portion of the abdomen. I recently operated on a patient who had vomited several times a day for over a year. I removed a large, inflamed appendix, which was the sole cause of her trouble. She has not vomited since the operation, which was more than two years ago.

There are some special symptoms which are indicative of disease of the stomach or duodenum and which are not to be ascribed to gall stones or disease of the biliary tract, nor to appendicitis. The most important one is the presence of blood either in the material vomited or in the movements. Such blood, usually minute in quantity, is a more or less constant evidence of gastric or of duodenal ulcer.

Now it is not necessary nor is it best, that I should attempt to make you familiar with the diagnostic signs and symptoms of these diseases. Your physician is the one to whom you must apply, but, I want you to go to him with the knowledge of the fact, *and impressed with it,* that chronic indigestion is not a normal condition, and that the vast majority of cases are susceptible of cure, *I will not say treatment, for in the past there has been too much treatment and too little cure.* If a case of chronic indigestion cannot be cured by proper regulation of diet and by properly following the rules of hygiene, and if it is not known to be due to some such trouble as Bright's disease, or heart disease, one

should have ever in mind the fact that a very large percentage of cases of chronic indigestion are due to some disease which is readily curable by a properly performed surgical operation.

Chronic appendicitis is a condition which is fraught with much danger and is accompanied by either constant or intermittent indigestion. The great majority of cases of chronic appendicitis are overlooked and are not recognized because the classic and well-known symptoms of acute appendicitis are lacking. Of course, chronic appendicitis may be evidenced by repeated attacks of more or less acute appendicitis, and then the diagnosis should be easy and the treatment should be obvious. *There is but one proper treatment for appendicitis, be it acute or chronic, and that is a surgical operation.* This is a question we have fought out long ago among ourselves, the physician and the surgeon, and to-day we stand united in the opinion that I have just expressed. By operating on cases of chronic appendicitis we save the patient the danger of repeated acute attacks and of all the complications which may result from more or less chronic invalidism and lowered vitality. In the hands of good surgeons the operation during the chronic stage, or during an interval in recurrent cases, is almost without danger. In a large hospital with which I have been connected for nearly twenty years neither I nor any of my associates have ever lost such a case.

When asked the question—"Is life worth living"—Sidney Smith replied—"That depends upon the liver." Let us now consider the liver.

Of the disease of the biliary tract we may take for example all those various conditions which are the result of gall stones. Gall stones cause a very large proportion of the cases of chronic indigestion. After forty years of age gall stones are a very common occurrence. They are found in about one individual in ten. Formerly it was thought that the majority of cases of gall stones did no harm and produced no symptoms. This was a mistaken idea. Undoubtedly every gall stone is producing more or less harm, and *is always potential of great harm,* and undoubtedly every case of gall stones has symptoms. We are not always wise enough to recognize them. The vast majority of cases of gall stone disease do not have severe symptoms and do not have those symptoms which used to be recognized as the classic signs of gall stones, namely, pain, colic, vomiting and jaundice. Perhaps the only sign of gall stones may be a hyperacidity of the stomach juices, or a certain amount of abdominal discomfort, or a sense of distension, with eructation of gas. These patients are often not emaciated, but rather overweight. As Deaver expresses it, "fair, fat and forty, and belches gas," would describe many of these cases. *There is no cure for gall stones except a surgical operation,* and a surgical operation for gall stones is a comparatively simple procedure, and in the hands of a competent surgeon is a safe one, provided it be undertaken at a time when severe complications have not resulted from undue delay. All cases of gall stones are simple in their nature during the early stages. Most of them become complicated and complex later on. Every case of gall stones should be operated upon unless the patient has some peculiar condition or disease which would make an operation unwarranted.

There is a wide difference of opinion today in the medical profession on this point. All surgeons and all physicians who are thoroughly familiar with the pathology of gall stone disease are agreed as to the wisdom and necessity of operation in these cases. But unfortunately there are some doctors who have not kept pace with the progress in this particular field, and still hold to the old tenets which were based on lack of knowledge. They have not followed their patients to the operating table and have not seen the facts laid bare.

There is one fact which would demand operation in every single case of gall stones, if there were no other reason, and that is that every case of primary cancer of the gall bladder and of the bile ducts has been preceded and undoubtedly caused by the irritation due to gall stones. It is reasonable to assert that if every case of gall stones were operated on and cured during the early stages there would be no such thing as cancer of the gall bladder and the bile ducts. But there are many other reasons why every case of gall stones should be operated on. The complications which arise from neglected gall stones are too numerous for me to mention at this time. The deaths which take place from gall stones are nearly always in cases which have been long neglected and in which the pathological condition has changed from a simple one to a complex and complicated one. The danger lies in delay.

Let us now consider chronic ulcer of the stomach and duodenum. They are so nearly allied both in their anatomical site and in their symptomatology and treatment that they may well be considered under one head. There is one great difference between them, and that is the fact that duodenal ulcers do not usually or frequently result in cancer while gastric ulcers are so constantly found as a cause of cancer of the stomach that they are rightly considered as a pre-cancerous condition. In the Mays's large clinic it has been found that 70% of cancer of the stomach has been preceded and undoubtedly caused by a chronic ulcer.

Gastric and duodenal ulcers may produce any or all of the symptoms common to chronic indigestion and they have certain special symptoms which distinguish them. Among these are hunger pains, i. e., pains produced by fasting and relieved by eating, and the presence of blood in the stomach contents or in the stools. In speaking of gastric ulcer in this connection we are not considering those cases of acute superficial ulcers which occur in young persons. These are superficial in their character and tend to spontaneous cure. The ulcers we are talking about are of a very different character. They are hard, indurated, deep-seated, they are chronic and do not tend to get well. Their tendency is to vary in severity, so that there will be periods of apparent intermission, but their tendency is really toward chronicity, and they constantly threaten the patient with some serious complication, such as severe, or fatal hemorrhage, perforation with fatal peritonitis, and finally, in an unknown proportion of cases, they result in 70% of cancers of the stomach.

Every case of gastric or duodenal ulcer should be cured. Medical and hygienic treatment should first be employed and given a thorough trial, but if improvement is not progressive and if cure is not complete, and if recurrences take place after apparent cures, the case should be recognized as a surgical one and a surgical operation should be performed. In skilled hands surgical operations for gastric and duodenal ulcers are very safe, and the results are extremely gratifying, nearly all cases being permanently cured. The results of medical treatment are very unsatisfactory. It is not known nor can it be known what proportion of cases are cured by medical means. Many a patient appears in the list of cures of several gastrologists, so that each specialist may think that he has cured this case. Thus it may happen that one patient with an uncured or relapsing ulcer may appear as an example of cure in ten different lists,—one failure being reported as ten successes.

It is of the utmost importance that these gastric ulcers should be cured. *By that I mean permanently cured.* The reasons for this are many and should be accepted without dispute or argument. A gastric ulcer is a constant menace to its possessor. If it results in nothing worse it produces a condition of semi-invalidism. The patient may have a disturbance of the nervous system which may be marked by slight symptoms such as irritability, insomnia, etc., or it may go on to that dreadful state which is known as neurasthenia or nervous prostration. By imperfect nutrition and by reduced power of resistance, one of these patients is an ever ready prey to some such disease as tuberculosis.

But these are not the most serious sides of gastric ulcer. Gastric ulcer is the cause of many hundreds of deaths due to perforation of the stomach with an acute fatal peritonitis. And last but not least is the fact that every gastric ulcer is a potential cancer of the stomach. We do not know what proportion of them become cancerous but we do know that more than two-thirds of stomach cancers have their origin in gastric ulcer.

In a brief lecture like this it would be impossible to cover much of such an important topic. I have not even enumerated the various conditions and lesions which may produce chronic indigestion and dyspepsia. I felt that it would serve our purpose better if I confined my remarks to the three prominent examples of which I have spoken. After all, they are the three most frequent causes of chronic indigestion.

In summing up, I wish to re-state some important lessons which medical men have learned concerning facts which it is of the utmost importance that the general public should have a knowledge. Among these facts are the following:

First, that many of our preconceived ideas not only of digestion but also of indigestion were erroneous.

Second, that most of our actual knowledge of this subject has been acquired within the last ten or fifteen years.

Third, that the best way to study these phenomena is at the operating table on the living subject. In this way we study the

pathology and physiology of the living and not of the dead.

We have learned that most cases of chronic indigestion have a definite cause in an actual lesion. We have learned that many of these lesions are of such a nature as to be readily curable by surgical operation but not curable by any other means. We have learned that we should regard these causes as ones of the utmost importance and that we should always seek for the cause, and having found the cause we should attempt to apply the remedy. And we have learned that in a very large proportion of cases the only remedy will be found in surgery. By curing these patients in the early stages we will avoid the gravest dangers, for the most serious conditions are found in cases that have been long neglected. By curing these patients early we shall avoid innumerable deaths from perforation and septic peritonitis, and early cure of these conditions will prevent one hundred per cent. of the cases of cancer of the gall bladder and the bile ducts, and seventy per cent. of the cases of cancer of the stomach.

361 Park Ave., New York City.

GETTING IT OUT OF THE DOCTORS

In April, 1912, suit was brought against two noted surgeons of the German Hospital in New York City for leaving, after operation, two sponges in the plaintiff's abdomen. What actually happened was that the family physician later did a minor operation during which he used two pieces of absorbent cotton. It was those two pieces which the plaintiff assumed had been abiding in his abdomen since his first operation. Newspapers all over the country printed headlines telling how the fellow-bunglers had sewed up those two sponges within their victim—first-class copy. When the case came up for trial, it was proved that one of these alleged miscreants had not even been present at the hospital operation; that absorbent cotton is never used in the German Hospital for abdominal sponges; that the family physician had positively assured the plaintiff the cotton he had used had never been inside the latter's abdomen, which he had, furthermore, never opened. The jury ended the suit of that G. P. (in medical parlance, grateful patient). Those surgeons have been harassed through two years and have had to engage counsel at loss to themselves; when their sole crime was having devoted their consideration and skill to a patient who was shown to have had not only one but four serious diseases—hernia, Bright's, diabetes and a heart lesion—and who, through their ministrations, nevertheless still lives. They were sued by that patient for ten thousand dollars. Medical history teems with accounts of such suits, almost always instituted by charity patients. Are there headlines telling of the issue of this suit? Hardly; where would be the news value?—*Harper's Weekly.*

What is satisfactory to reason is law to the will.—*Kant.*

It is difficult to reason a man out of an idea he has acquired without reason.

No degree of knowledge attainable by man is able to set him above the want of hourly assistance.—*Johnson.*

They that will not be counseled cannot be helped.
If you do not hear reason she will rap your knuckles. —*Franklin.*

Ignorance is the curse of God,
Knowledge the wing wherewith we fly to heaven. —*Shakespeare.*

THE FEEDING OF INFANCY AND CHILDHOOD.

By Joseph Popper, M. D.,

Attending Physician to the Infant Welfare Station,
Lebanon Hospital.

The subject on which I have the privilege of addressing you this evening is one which would require much more time to cover fully than is at my disposal. I can only hope to emphasize certain practical points which I trust will enable you to care more intelligently for your babies and children.

It is not my purpose to make all of you feeding experts, desirable as that would be. I shall feel satisfied if my lecture this evening will help you to carry out *your* doctor's orders with discretion.

Right here I should like to plead with you to go to your doctor when the child is well and let him tell you how to keep him well. See your doctor regularly as often as necessary to get proper advice. It is a rational and an economical way to conserve the health of your children. It means spending the "ounce of prevention" to save the "pound of cure."

We owe it to our children to give them a proper start in life, and certainly the least we can do is to give them a healthy body.

We shall deal mostly this evening with the child in its first few years of life, and nothing is of more importance in our early existence than proper nourishment.

Before taking up the subject of feeding proper, let us briefly consider a few fundamental principles.

In the first place, what is food? Food is anything we eat or drink for the purpose of nourishing the body. The human body has been likened to an engine which requires coal and oil to keep it working. The body differs, however, in that in addition to requiring food for energy, we require it as well to repair the continual wear and tear of the various parts of our system, and also for growth. This latter requirement is, of course, most evident in infancy and childhood.

There are three principal constituents of food in general, namely, Proteins, Starches and Fats. Water and Salts are also important as food, but they are not considered as such in the same sense as the substances mentioned above.

By protein is meant such food, for example, as eggs and meats. This food constituent is the most important of the three, for without it human life cannot be sustained very long. It is the proteins that provide for the repair and growth of the body.

The starches and fats are important principally as heat producing elements. They provide for the energy of the body.

Now, we require all of these elements in more or less definite proportions for proper nutrition. How then do we know how much of each to take?

Nature has very well provided the grown person with what we call an "appetite," which more or less automatically selects the proper quantities of these food constituents. The infant, however, not being endowed with discretion, and not being physically able to use its selective appetite if it had one, must needs depend upon the grown folks to be fed. Here again Nature foresaw that the average mother could not be depended upon to select the proper food for her offspring, and has therefore prepared a food already mixed with the proper proportions of the various food elements, which we call "Human," "Mother's" or "Breast" milk.

BREAST FEEDING.

Human milk is therefore a perfectly natural food for the baby, and is at the same time naturally perfect. The only fault I have to find with it is that it is not entirely "fool-proof," so that, when improperly given, it may be the source of much harm.

That breast milk is the ideal infant food cannot be emphasized too strongly. I need only tell you that the majority of deaths in infants occurs in the bottle-fed, to make you realize how important breast feeding is. Many an infant's life has been saved from death due to pneumonia or other severe illness, only because of the breast feeding keeping up the child's resistance.

Physicians are sometimes consulted by mothers for the purpose of weaning their babies early, the sole excuse being that nursing interfered with going to matinees,

afternoon teas, suffrage meetings and card parties. I am happy to say that within recent years the number of such mothers has been steadily reduced.

WHAT AFFECTS MOTHER'S MILK.

Often enough the desire to wean comes because the baby does not seem to gain much on the breast. At the same time one finds that the mother has been undernourished due to abstaining from various articles of diet for which she has a great appetite, and which, forsooth, was forbidden her by her neighbors or relatives as being harmful to the milk.

The fact is that a woman's milk is not at all affected by any article of diet that agrees with her; so that I advise all mothers to eat of anything and everything their heart desires.

In general, it is important for every nursing mother to live on a good wholesome diet, containing about two quarts of milk a day in addition to her regular meals. Insufficient milk in the breasts often comes from insufficient nourishment on the part of the mother.

Now as regards various illnesses in the mother affecting the milk: it has been found that even some very severe diseases do not materially alter it; but of course, it is wisest to refer the matter of nursing during illness to your physician. Just because you have a little fever or feel out of sorts is no excuse for depriving your baby of its milk.

There is one condition in the mother that does seem to affect the milk very often, and that is nervousness. I find in practice that that is one of the most frequent causes of early weaning. A mother who is subject to great worry and is fretful and excited for any length of time will soon have her baby's stomach and bowels upset and losing weight.

The nursing mother must avoid worry and undue excitement. She must see to it that she leads a quiet, wholesome life with plenty of fresh air and sound sleep.

The familiar saying "a sound mind in a sound body," may be readily paraphrased for our purpose into "a sound baby in a sound mother."

NURSING HABITS.

In order to nurse one's baby successfully it is necessary to form certain habits in nursing from the very beginning.

Perhaps the most important habit to master throughout childhood is the habit of feeding regularly. That is particularly true of the nursing period.

Various specialists on feeding babies disagree as to the frequency of nursing; some believe in nursing every two hours, others every three or four hours, but all agree that whatever the interval of feeding, it should be carried out regularly.

Experiments have been performed to determine the number of feedings in twenty-four hours it is necessary for the average infant to receive in order to gain weight and develop properly; and it has been found that five feedings in 24 hours supply sufficient nourishment for that purpose. In other words, during the first few months of life when an infant is fed only on the breast, nursing once every four hours is all that is necessary. I have found in practice, however, that it is so difficult to get the average mother to nurse every three hours not to speak of every four, that I make it a rule to have my mothers nurse their babies every three hours for the first five or six months and then every four hours.

I am well aware of the fact that there are quite a few mothers who nurse their babies irregularly every hour or two and who nevertheless have healthy, fine-looking youngsters. That only goes to prove what a breast-fed child can stand in the way of abuse. You must remember, however, that for every baby that is nursed frequently and irregularly and is doing well, there are scores that are being made sick and buried.

The death-rate from diarrheal diseases has greatly improved within the last decade, owing to the greater prevalence of breast feeding and better nursing habits.

To be more explicit, then, the nursing routine that I advise is as follows:

For the first five or six months nurse once every three hours beginning at 7 A. M. The baby is awakened regularly for nursing if asleep, except after the fifth nursing at 7 P. M., when he is permitted to sleep until he awakens. As a rule the baby awakens at about one or two in the morning, when he is nursed. After that he is permitted to sleep until 7 A. M.

At about the sixth month the nursing interval is changed to four hours, beginning at 6 A. M. The same arrangements

are followed as outlined for the three hour intervals except that five feedings are given in twenty-four hours instead of six.

Between nursings plain boiled water or cereal water may be given. There is a custom among certain women, of using fennel tea instead of water or cereal water. I mention this custom only to condemn it; for fennel tea is slightly laxative, and it is hardly desirable to get the child's bowels accustomed to physics.

Here also I should like to caution you against giving more than a single feeding at night, for you can readily understand how important it is for the mother to get sufficient sleep. There is therefore no more pernicious habit in nursing than to allow the baby to lie at the breast all night. For the same reason mothers should avoid sleeping with their babies.

Now, at about the fourth or fifth month I like to begin to give my babies some zwiebach softened with boiled water and also some orange juice. At about the sixth month I begin to add some cereal well cooked and served with equal parts of milk and water. At about the ninth or tenth month the baby is allowed some beef-juice, broths, baked potato, apple-sauce and prune pulp.

All that I have said thus far concerning the method of feeding does not hold true for all babies. In fact I am less guided by the age of a baby than by the weight and development. For example, if a baby at three months weighs 15 pounds, I do not hesitate at all at feeding him like a baby of five or six months. One should also remember that each child has a constitution of its own, with its own peculiarities, and one cannot feed all babies according to a single rule or method. "What is food for one may be poison for another" is especially true of babies.

SYMPTOMS OF UNSUCCESSFUL NURSING.

How shall we know whether the baby is doing well on the breast or not? There is really only one reliable indication, and that is the weight. If a baby gains steadily between one and two pounds a month, that baby may be said to be doing well. I would not have you understand, however, that if the baby gains less than a pound a month at a certain period, that that is any reason for taking him off the breast. It may only be a reason for improving the mother's milk.

In general there are three reasons for a baby not doing well on the breast, (1) the quality of milk may be poor, (2) the quantity insufficient or (3) the milk too rich.

When the milk is poor in quality as in the nervous woman, the baby's stomach and bowels are usually deranged, and there is very little or no gain in weight.

The average baby should nurse about 15 to 20 minutes at a time. When the milk is deficient in quantity, however, you will often notice that the baby is never satisfied even after staying at the breast for one half to one hour.

A milk that is too rich, containing a high percentage of fat, may often upset a baby's stomach and bowels. This is due to the fact that the infant's digestive apparatus is too delicate to take care of rich food. It is often possible in these cases to dilute the breast milk and in that way correct the disturbance.

In any case where a baby appears not to be gaining sufficiently on the breast, I should like to caution you against taking it upon yourselves to change to a bottle. A baby should be given every chance to do well on the breast, and only on your physician's advice should you attempt to change to bottle feeding.

ARTIFICIAL FEEDING.

We shall now consider the subject of artificial feeding.

Once it is definitely decided that a mother cannot nurse her baby at all or insufficiently, it becomes necessary to give the baby a food to take the place of the mother's milk. The food that has been found most available is cow's milk.

Now it should always be remembered that cow's milk was originally intended as nourishment for the calf and not the human infant. Therein lies the great difference between cow's milk and human milk. It is not alone that the various constituents of the milk exist in different quantities, but that these very substances altho chemically alike in both milks, differ in a manner which scientists have not yet been able to discover. There is a vital, one might almost say, a spiritual difference.

That this is so has been very easily proven. Cow's milk has been so modified as to be identical in composition with human milk, and yet a baby that would easily digest the human milk would be readily upset on cow's milk of the same composition.

In order, therefore, to adapt the cow's milk to the infant's need, it has been found necessary to modify it in certain definite ways. To go into a discussion of the various methods of milk modification would lead us into technical fields which are beyond the scope of this discourse. Suffice it to say, that in modifying milk, some authorities have used plain whole milk, others top milk, cream mixtures and so on. All of these methods are successful when properly carried out.

I have found, however, that the simplest method and the one that lends itself most readily to the intelligence of the average mother is the one that employs whole milk, diluted with water with the addition of a sufficient quantity of sugar.

I shall not attempt to lay down any definite rules for modifying milk at various ages. My reason is that babies differ so much with respect to their ability to take various formulæ, that any rules so far from being at all definite are very indefinite. It is important to bear this fact in mind; for only then can you understand why it is that even in the hands of the best specialist, a baby will not always do well on a particular formula. Each child is a case unto itself, and therefore it is manifestly unjust to expect the average physician to strike the proper formula the first time he sees the baby.

PREPARATION OF MILK FORMULA.

Let us now consider the proper method of preparing milk for the bottle.

In the first place what milk shall we use? In the city of New York various grades of milk are offered for sale. The cheapest is Grade "C" or what is commonly known as "Grocery Milk." This milk is intended for cooking only. Those grades that are intended for drinking are known as Grades "A" and "B" and Certified Milk. The difference between the various grades of milk is one of degree of cleanliness. Thus, certified milk is the best, and grades "A" and "B" follow next in the order mentioned. Certified milk may be used raw, as delivered, for the reason that it contains very few germs, comparatively speaking. Grades "A" and "B" are pasteurized, that is, treated with heat to destroy a certain number of harmful germs, before put on the market. This would render the milk perfectly safe for use as delivered, were it not that commercial pasteurization is not entirely dependable.

Now, it has always been the impression among physicians as well as the laity that cow's milk is more nourishing when taken raw than when boiled or pasteurized. Recent experiments, however, have proven this belief to be a fallacy. Babies do just as well on good boiled milk as they do on raw, and better in many cases. That this is true, I have proven to my own satisfaction in the Infant Welfare Station at Lebanon Hospital where most bottle-fed infants are given milk which is brought to a boil. The vast majority of these babies are doing well. Perhaps the chief reason for my ordering the milk boiled is because the poor and even those in moderate circumstances cannot afford to spend 15 cents a quart for Certified Milk.

Having selected your milk, you require a certain number of utensils with which to prepare it for feeding. Briefly stated, you require an 8 ounce graduate, a funnel, a pitcher for mixing the food, feeding bottles and a tall cup for warming a bottle.

Cow's milk in order to be adapted for infant feeding must be diluted with water. In diluting the milk the energy producing elements viz., fats and sugar, must of necessity be reduced to too low a quantity for the infant's proper nutrition. We are therefore obliged to make up the deficiency by the addition of sugar and sometimes also by diluting with cereal water instead of plain water. Most of us have been accustomed to using milk sugar to mix with the food. I have found, however, that plain granulated sugar or a mixture of sugars known as Dextrin and Maltose are far superior for that purpose.

Now then, having prepared your milk, you next boil up some water or cereal water as the case may be, and then add your sugar to the water. You now have a definite quantity of milk and of water. These are mixed together and the whole divided into the required number of bottles. The bottles should be cooled off and placed on ice. One of these bottles is then taken at regular feeding intervals and warmed up. Before giving it to the baby it is always well to test the temperature of the mixture by pouring a little on your arm. Do not, as some women do, take the nipple into your own mouth to test the temperature. To say the least, it is an unsanitary habit.

As I have said before, I cannot at the present time go into a discussion of how

to prepare feedings for the various periods of the infant's life. I can only state that the total amount given at a feeding should on an average be one ounce more than the number of months of the child's age. Thus a child of five months should receive six ounces of any mixture at a feeding.

With regard to the feeding intervals and also additional food during the first year in bottle-fed babies, I may state that I follow the same routine as with the breast-fed.

Now, how shall we judge whether a bottle-fed baby is thriving properly on any particular formula?

At first thought, one might say as with breast-fed babies, the weight is the only criterion. But that is not all. There is another important consideration that does not concern us so much in the breast-fed baby as in the bottle-fed; and that is the ability of the infant to properly and completely digest his food. A bottle-fed infant who gains in weight and at the same time vomits and has green, mucous stools, must have that disturbance corrected or soon trouble will come. Vomiting and bad stools in a breast-fed baby, if only the baby gains in weight, is not nearly of so much moment as in the bottle-fed. In fact, that condition in the breast-fed can often be ignored with impunity.

A bottle-fed baby, therefore, in order to be considered as doing well, must gain sufficiently, and its stomach and bowels must be in perfect condition. This happy state cannot be attained by a single formula. The mixture may have to be changed once a month or oftener. Here again I must caution you against changing the formula without your physician's advice. The reason for that is obvious.

Also I must warn you against the well-meaning but at the same time trouble-bearing neighbor. I refer to the woman who comes to you with free advice. She will tell you that she has reared all her children on a certain formula or food, and that therefore your baby should do well on the same. She never tells you how many of her children she has buried on that food; and of course, she does not know that your baby and her children may have entirely different constitutions. Therefore, either avoid this adviser or thank her for the advice and follow the rational counsel of your family physician.

INFANT FOODS.

Now it sometimes happens that a baby for some reason or other, cannot thrive on any milk formula. We are then compelled to resort to some food other than plain cow's milk. For that purpose there are various foods on the market. For example, there is condensed milk, malted milk, Mellin's Food, Nestlé's Food, Imperial Granum and so on. All of these foods are of value in properly selected cases. However, if one were to be guided by the advertisements of these foods accompanied, as they are, by pictures of good-looking, healthy-appearing babies, it would seem that simply to use this or that food, means the end of all feeding troubles. Would that that were true! And yet it is far from the truth. I know of many cases of babies' lives being sacrificed because the mother was lured into using a food which did not agree with the baby, by the advertisement or from having seen some other baby who happened to thrive on that particular food.

I would repeat, therefore, that all these foods are of value but only when properly prescribed by a physician.

WEANING.

Having completed the feeding of the infant, we come now to a consideration of the feeding after the first year.

We must naturally begin with the all-important subject of weaning.

When and how should a child normally be weaned? That is a question concerning which there seems to exist a great deal of uncertainty in the minds of most nursing women. This uncertainty comes from a natural fear to change from a condtion of "well enough" to one of unknown possibilities. This is especially true if weaning is contemplated during the summer months. Most mothers anticipate the so-called "second summer" as one would welcome disaster. Nor is this fear a groundless one. While the act of weaning during cool weather may be accompanied by upset bowels due to the cow's milk, there is no question that the condition is much more easily remedied than the same derangement occurring during a hot spell.

The reason for this does not lie, however, entirely with the act of weaning. The

real trouble in the majority of cases is in the preparation of the substitute feeding. The milk may not be fresh or it may be given too often, or the baby may be permitted, as happens quite frequently, to take a few "tastes" from the table. Often enough the so-called "table" may be the floor the baby is creeping on.

In spite of all this, I am a firm believer in weaning at the end of the first year in the average baby. As much harm and often more is done to the child if allowed to nurse to take the bottle exclusively for fifteen to twenty months as some women do. Such a baby is usually pale and flabby and slow in general development. The reason for this is plain. The quality as well as the quantity of the breast milk is gradually lowered as the child reaches the twelfth month, and after that it is positively inadequate for satisfactory nourishment.

On the other hand it is a mistake to change from the breast to cow's milk too abruptly. Two weeks or even more should elapse before the breast is entirely taken away.

Finally, therefore, if weaning is done gradually, and the proper food is prepared carefully, your baby will have nothing to fear and the "second summer" will lose most of its terror.

FEEDING AFTER THE FIRST YEAR.

It is a significant fact that there are a very large number of deaths from diarrheal diseases in children over one year than in infants. At first sight this may appear strange. And yet when you consider how carelessly most children over one year are fed, the reason for the above statement becomes plain.

First of all it is important to recognize that regularity of feeding is just as important after the first year as in the infant. Likewise, care in the preparation of the various foods should be scrupulously observed.

During the second year four or five feedings a day should be given, and the following articles added to the milk diet: Cereal jellies, one egg a day, scraped beef, broths with stale bread or rice, orange, pineapple and prune juice and apple sauce, and some vegetables.

These vegetables, like spinach, cauliflower, asparagus, etc., should be well cooked and thoroughly mashed before serving.

During the third year, the same diet should be continued for only four feedings a day.

The diet from the third year on is gradually increased in amount but lessened in frequency, until at six years it becomes the regular table diet of the adult and only three meals a day. One should be careful, however, not to give too much of fried and of highly seasoned foods. Another important point is that water should form a part of every meal.

The child's desire for sweets is a subject that deserves consideration. To my mind it is a natural appetite and should be gratified. However, when indulged in to excess it will destroy the appetite for all other wholesome food. Therefore allow your children cakes and candies but in moderation. At the same time see that they do not indulge in candies made with various poisonous coloring matter.

In conclusion, may I be permitted to remark that if more attention were paid to the problem of the feeding of infancy and childhood, both on the part of the medical profession as well as the public, the future generations will be a healthier and happier race.

787 Caldwell Ave., New York.

Practically every man has what is known in athletics as the "edge," or perfect fettle, but once a day. If he is to have it in the morning, when he faces problems of extreme importance, he cannot also have it in the evening, when he is expected to scintillate. Many have made the mistake of thinking that the evening effort was more consequential, and in order to be in trim for it have had to mark time mentally through the day.

When he is cast in the shade the optimist rejoices that he won't suffer from sunstroke, anyhow.

The victim of love at first sight seldom has a chance for another look.

Most of us get what we deserve, but only the successful will admit it.

THE THERAPEUTIC VALUE OF FOOD IN DISEASE.—A GENERALIZED BIOCHEMIC STUDY OF NUTRITION.

By Theodore William Schaefer, M.D., Kansas City, Mo.

Continued from the May Number

THE SLOW PROGRESS OF THE SCIENCE OF NUTRITION.

What is the present status of our actual knowledge of the important question of nutrition? It is a fact that the status of the science of nutrition has not made very great advancement within recent years and can be said to be practically at a stand-still. Here is the proper place to speak once and for all most clearly and emphatically that in regard to the subject of nutrition we are still groping insecurely in the dark! The entire domain of the subject of the study of nutrition and alimentation demands a complete revision! We are clinging too much to scientific traditions!

The patient investigator and lover of truth who has the spare time to do some thinking and who desires to broaden his intellectual horizon will find that the mass of mankind is held in bondage and swayed by matters of faith and dogma. There are but few who really think! Now, the above statement holds good in regard to philosophers, physicians, theologians, historians, scientists, lawyers and politicians—especially the latter! The inquirer, who desires further information when approaching scientific questions will find when investigating the reasons why the scientific world holds certain articles of scientific faith, will indeed encounter many surprises. He finds, on closer examination, that many of our views in the various departments of learning are based upon authority and tradition, and that we are living under the tyranny of scientific dogma. The great mass of physicians in our day accept blindly the stereotyped figures of Voit's daily rations of food for man as absolutely conclusive. The whole attitude of mind may be summed up in these words: Voit has said so and so, therefore it must be true. This has always been the attitude of mankind. An individual obtains a reputation for possessing a certain kind of knowledge not supposed to be possessed by the general multitude. Therefore, what he says must be true. In medicine, the collateral sciences and in the other domains of knowledge the wildest flights of fancy have been accepted as absolute truth. We find that in all ages men have lived under the tyranny of dogmatic enunciation. Our concern is not with the past, but with the present. It is a fact that the declarations of men accepted as leaders or as authorities have before now seriously retarded progress. Probably the most interesting aspect of the influence of authority in medical matters is to be found in the way in which we accept without the least critical inquiry our present accepted knowledge of the physiology of digestion as absolutely true. In recent years many of our conceptions of food and nutrition have undergone many great changes and we now begin to wonder why we ever believed what we did believe! In point of fact we could not have helped ourselves. The most remarkable examples of the tyranny of scientific dogma and tradition are supplied by those cases in which certain statements are made to reconcile the glaring discrepancies. From what will follow it will require no great intellectual acumen to perceive that Voit's theory of nutrition needs a considerable alteration.

In the due course of time some one else will tell the medical world that Voit was mistaken and that many of our accepted views of the physiology of digestion are actually antiquated and need a complete renovation, and then physicians will accept this as true, but only so if *novus homo* (new man) has as high a reputation in science as his predecessor. In the past superstition, force and religious intolerance hindered the intellectual advancement of mankind. It is a fact that much progress in our day is hindered by the predatory interests of com-

mercialism, politics, cowardice, the ignorance that dominantly ignores and the reactionary policy of the suppression of publicity. It is indeed true that old habits, customs, taste and tradition are often more powerful than real knowledge! Some of us are losing our faith in the old physiological dogmas enunciated by *ex-cathedra* authorities that have been sanctioned by time.

In the cultural history of mankind only a few determinative characters succeed in making themselves felt by the force of their minds and are thus enabled to make a deep impression on the rest of mankind. It is indeed a paradoxical fact that it is not a matter of great moment after all as to whether their ideas are right or wrong to those who do not think! Intellectually the world moves very slowly. When once a literary, quasi-scientific impressionist has succeeded in making his impress on mankind, his views prevail and become firmly established in the minds of the multitude. If wrong, it requires a long time to dislodge and refute old incarnated ideas through the most powerful and united efforts of greater determinative minds.

It is a fact that many of the mooted questions pertaining to nutrition are signally yet in doubt, and are still unsettled and will remain so for some time to come.

Notwithstanding the many isolated advances of our study of nutrition and our supposed and reputed knowledge of the articles of nutriment there are many very important questions in regard to the value of food and its bearing upon the intricate processes of nutrition that still remain to be solved. It is evident that those who know the situation (especially those who belong to the inner circle and command the requisite and deeper knowledge of facts) know that we are devoid of the necessary, trustworthy, scientific and general equipment that permits conclusions that are deciding, certainty of action and requirements, and, therefore, grants a goal and a wide scope for the guidance of our political economy. Armed with the most approved modern technical appliances we are, however, confronted by the discouraging fact, to which attention was drawn by Ragnar Berg, an investigator in this new province of the study of nutrition, who recently made the unrefuted statement of the impossibility of procuring accurate analyses of the articles of nutriment. He says: "We do not possess a complete and faultless analysis of any of our articles of nutriment."

No single mind is at all capable of grasping the whole domain of knowledge comprising the vast field of foodstuffs. The work of any individual and the power of private institutions must be inadequate in proportion to the magnitude of the tasks of the present and future to solve the problems confronting us. In a republic we cannot expect much from the government, for political office holders are not, as a rule, men of science!

Only private institutions endowed with large funds, says Professor Henry Kraft, having numerous and reliable co-workers in the respective institutions at their disposal, could be at all able to retrieve in a rapid and united effort that which is possible and necessary and of which we have been lacking, because the sum total of the investigation in the domain of nutrition has drifted into a dead channel.

The old, conventional doctrine of Voit, that the daily amount of organic food ought to be supplied to the bodily mechanism of man should be 118 grammes of proteids, 500 grammes of carbohydrates and 56 grammes of fats is erroneous. According to the researches of our American physiologist, Chittenden, the Danish investigator, Hinhede, the German physiologist, Kraft, and a number of others, we can subsist comfortably on one-half of the quantity of proteids which are demanded by Voit and his school. The writer is convinced that the heat contributed by the combustion of the ordinary food supply for an active working man sufficient to maintain the nutritive equilibrium of its food value of 3,500 calories can be differently adjusted, instead of giving the nitrogen factor the almost predominating importance.

In his researches of the nutritional value of the different foodstuffs Voit experimented originally with just a single person and his experiments lasted every time but one day or perhaps two days. These figures were obtained, in the first place, from starvation experiments and from repeated and entirely insufficient determinations, lasting from one to two days on tissue changes performed on his laboratory servant and, in the second place, also from the estimations on the average of the daily consumption of food of other individuals, according to various other investigators. Voit found that the person upon whom he performed his experiments remained in a state of bodily equilib-

rium at 118 grammes of proteids; but it never for a moment occurred to him to use a less quantity of proteids. Had he used 59 grammes of proteids he would have observed that he could have obtained likewise 118 grammes of proteids. Herewith Ger- a satisfactory equilibrium as in the case with man science possessed its dogma of nutrition, in whose ban until this very day German people view in general its questions of nutrition. And what has been the result of this dogma of nutrition? A host of preventable disturbances of nutrition, beginning with the infant and later on ending in severe disturbances of nutrition, winding up in non-compensatory disturbances of metabolism, an infinite sum of ills, sorrow, sickness and lingering maladies that could have been prevented in a large measure, if one only possessed the requisite knowledge to nourish the body in a healthful manner.

It is not our purpose to discuss at length the reason why a theory of this kind should have survived a half of a century without being challenged and at the same time should have dominated science so long and effectually.

The explanation consists in the fact that Voit himself was swayed and influenced by Liebig's old idea of the dominating conviction of the supposedly great rôle of the proteids in the life processes of nutrition. Voit's conclusions, therefore, were warped and his authority was so great that even his successors believed that they could not free themselves from them. Besides the explanation given above there is a deeper reason when Voit's views are followed to their last logical and ethical consequences, over which he, however, had no control. It is based upon the fact of Voit's views being taken advantage of in the course of time by the dominance of the selfish commercial motive in the vicious control of human events.

Almost everywhere in Germany one still clings to the tradition originated by Liebig, Voit and other physiologists that protein must form the most important nutritive constituent of the human food. In opposition to this contention, Chittenden has shown by numerous experiments which he performed on brain and muscle workers, such as professors, students, soldiers, athletes, etc., proving that man can establish a nitrogen equilibrium with less than half of the customary protein regimen. The modern human product of culture suffers too much from over-nutrition; he eats too much meat. It is our conviction that the bodily demands for proteids have been overestimated by physiologists.

The agriculturist knows how he must cultivate and fertilize his plants. He engages an agricultural chemist to analyze the soil and from the results of this analysis he selects his fertilizing mixture. His sagacity is converted into good crops, and into ready money, says Prof. H. Kraft. He is familiar with the law of the minimum that was so ably enunciated by the celebrated chemist Liebig, according to whom the entire deficiency of one nutritive material that is so essential to the development and maintenance of plant growth or a diminution below the allotted limit occasion a general injury or even death to the plant. Should not this rule also have its application for the development and maintenance of the human body? Why, certainly, for right here the doctrine of human nutrition must extend its limits in an analogous manner and should not only concern itself with those substances that figuratively stand in the foreground of the bodily economy—with the proteids, fats and carbohydrates. The meritorious book of Liebig, that so thoroughly investigated the subject of mineral metabolism, says: "With a mixed diet the healthy person receives qualitatively and quantitatively, a sufficient and adequate supply of salts." A most excellent and worthy assertion, but, unfortunately, not proven and erroneous. The meaning of "mixed diet," however, has a different interpretation in our day. The physiologist Forster at one time coined the expression "nutritive salts." Had science given exactly the same attention in the very beginning to the fourth (mineral) constituent that it had given to the imposing quantity of protein, fat and carbohydrates, at the time when it became the reserved right of a few initiated, no doubt it would have become honestly known as the common property of mankind, because of its importance to popular health.

It is the conviction of the writer that this doctrine of Voit is erroneous. It is evident that we can be content with but one-half of the normal quantity demanded by him and feel, notwithstanding, just as well or even much better than when we follow the old rule. Indeed, we need not give too much attention to the proteid question that has been so adroitly and thoroughly commercialized in our day; should we live alone from nat-

ural, simple, nutritive substances, we will always receive an adequate quantity of proteids, and these economic and simple nutritive substances are on the whole probably the most healthful. The plant proteids, when properly prepared, can take the place of the animal proteids. There are millions of people who do not use animal food. Man as an omnivorous being is capable of living on an exclusive diet derived from the vegetable kingdom.

The exceptional tenacity of the Japanese soldiers fed on a diet poor in meat conquered the valiant Russian adversary nourished on a soldier's diet rich in proteid food.

The question whether a pure animal or vegetable food should be preferred, can be answered alike in many other similar cases, that the true position is evidently an intermediate one. As a pure animal food is unnatural for man, so is a pure vegetable dietary unsuitable and likewise does not meet the requirements of the human constitution; man is naturally dependent upon a *mixed alimentation derivable* from the *animal* as well as *vegetable kingdoms,* and this subject we will elucidate in another article in the due course of time.

(*To be concluded.*)

A HYGIENIC DECALOGUE.*

(1) *General hygiene*: Rise early, go to bed early, and in the meantime keep yourself occupied.

(2) *Respiratory hygiene*: Water and bread sustain life, but pure air and sunlight are indispensable for health.

(3) *Gastro-intestinal hygiene*: Frugality and sobriety are the best elixir vitae for a long life.

(4) *Epidermal hygiene*: Cleanliness preserves from rust; the best-kept machines last the longest.

(5) *Hygiene of sleep*: A sufficiency of rest repairs aid strengthens; too much rest weakens and makes soft.

(6) *Hygiene of clothing*: He is well clothed who keeps his body sufficiently warm, safeguarding it from all abrupt changes of temperature, while at the same time maintaining perfect freedom of motion.

(7) *Dwelling hygiene*: A house that is clean and cheerful makes a happy home.

(8) *Moral hygiene*: The mind reposes and resumes its edge by means of relaxation and amusement, but excess opens the door to the passions, and these attract the vices.

(9) *Intellectual hygiene*: Gayety conduces to love of life, and love of life is the half of health; on the other hand, sadness and gloom help on old age.

(10) *Professional hygiene*: If it is your brain that feeds you, don't allow your arms and legs to become anchylosed. Do you dig for a livelihood, don't omit to burnish your intellect and elevate your thoughts.

*These ten maxims for preserving the health were written by Dr. Decornet of France.

MEDIAEVAL CONGESTION.

One has often wondered how in old times citizens, their women and children, endured the gloom, confinement, and inconveniences of a fetid mediæval town, hemmed in by lofty walls, battlements, and towers, with no access to open country unless through some four, or perhaps six, narrow gates. All this lasted everywhere in Europe down to the middle of the seventeenth century. Those of us octogenarians who have known Avignon, Nuremberg, Florence, and Rome before any buildings existed outside the ancient walls, can imagine what European cities were, at any rate down to the religious wars of the sixteenth century. It seems marvellous that human nature could have endured to pass whole lives in cities which, except for their churches, abbeys, and guildhalls, were a network of dungeons, the like of which may still be seen at Orvieto or Carcassonne.

No doubt, there were no tall chimneys, no factories, steam-hooters, trams, or motors. But the real compensation, which enabled the people of Europe to endure for five or six centuries the horrors of their stifling cities within walls, was the freedom to pass in ten minutes on foot into a pure and verdant open country.—*Frederic Harrison, "In Praise of Bath," Cornhill.*

RURAL SANITATION.

RAT-PROOF YOUR HOUSE.

The rat is an unnecessary evil, an index of unhygienic, slovenly conditions, of filth and of putrescence; it is really one of nature's scavengers. We ought to be civilized beyond the rat stage, beyond the stage when we are content to endure the rat; beyond the period which Mark Twain described in Huckleberry Finn, when rats were like to drop in for lunch almost any moment out of a hole in the corner.

Get rid of the rat. It can be done. It is simply necessary to separate the rat from his food supply. Rats can stand pretty nearly any hardship in nature, they demonstrate their will-to-live against the very hardest kind of luck. But one thing they can't stand—starvation. The only way to starve the rate is to keep him out of your house.

If you contemplate having a new house built demand in your building contract absolute rat-proofing. If you are about to repair an old house of frame, brick, rock, concrete or any other material you can have it rat-proofed economically, sanitarily and permanently.

Dr. French Simpson in a Report of the United States Public Health Service, explains in detail what must be done. He shows how buildings already erected can be rat-proofed by the closure of all natural or accidental openings; how non-rat-proofed buildings can be remodeled, material being used impervious to rats; by the removal of material permitting rat refuge from yards, sidewalks, and passageways; by the removal of rat food and the protection of foods from rats; and last of all, by the destruction of rats by such subsidiary means as poisons, traps and so on.

Besides thus getting rid of rats you will get rid at the same time of a lot of repugnant insects, not necessary to mention, and which make their home comfortably enough in the rat's pelt.

Since rats are able to live between ceilings, in walls or roofs, can pass through from roof to roof by telephone and electric wires, and in other uncalculated ways, it is obvious that any plan for effective rat-proofing must take in every inch and corner of the building, from sub-cellar and basement to the roof, and the clotheslines thereof.

In rat-proofing a new building, if it is a frame structure it should be placed on a foundation wall not less than six feet thick, or brick or concrete, or such material as will be impervious to rats. This wall must be laid absolutely without a break around the entire building, not less than 18 inches beneath the surface of the surrounding soil (lest rate burrow under the walls and harbor beneath the building); and this wall must go upward flush with the inner surface of the floor above.

Floor joists must be imbedded in this wall, or the spaces between the joists must be filled in and perfectly closed, up to the wall level. Openings in the wall to admit plumbing or electric wires must be at once cemented to the full depth of the wall. Ventilation openings in the wall should be screened with cast iron gratings or wire cloth not less than 20 gauge nor greater than one-half inch. Into wall openings for basement doors these doors must fit exactly when closed, and should if possible be provided with appliances for automatic closing.

The ground area enclosed by foundation wall is most important of consideration. If no foods are to be prepared, stored or sold on the premises, this area must be covered with a layer of concrete at least three feet thick; and above this a floor of tongue-and-groove lumber should be placed, disregarding the dead space remaining between.

But if food stuffs are to be prepared in the house, for commercial or other purposes, the ground area must be filled in with earth or sand up within 3 inches of the top of the foundation wall, over which is then placed a layer of concrete as before, three or more inches thick; and upon this must next be laid cement at least one-half inch thick.

Ground areas must be concreted, because rats escaping through accidental openings subsequently made in the flooring will burrow and harbor in the ground beneath.

Whenever possible, and not prohibited by fire ordinance, basement ceilings should remain open and unsealed, so that rat refuge between them and the floor above may be prevented. If a finished ceiling is required, this should be made and kept rat-tight.

If expense prevents the installation of such rat-proof foundation as described, rat-proofing of frame structures (if not contrary to building laws) may be accomplished by elevation, on free underpinning, not less

than 18 inches above the surface of the surrounding soil; the ground area must here remain clear of lumber and debris, and clean all the time, lest a convenient, congenial and perfect rat harbor be provided.

Should chimney flues be carried by the wall from the basement to the roof and remain unused the openings should be closed with wiremesh, or stopped with a close fitting cover.

Roof doors and hatches must fit snugly and remain closed when not in use. Ventilators, skylights and unused chimney flues should be screened with galvanized iron wire cloth not less than 20 gauge nor greater than one-half inch mesh.

A careful inspection of the completed building is imperative; this is essential also following alterations or repairs. Any opening found sufficient to admit a rat will then be detected before it will become good for a rat population to flourish inside of.

Many city buildings are not rat-proof, though claimed to be so, because of the omission of screens to basement windows, to skylights and other roof openings; but principally by reason of the neglect of plumbers, electricians and others properly to close openings around electric wires, and pipes for conveying water, gas or steam.

Defects in the sidewalk must be repaired; and defective or absent lens lights in the sidewalks replaced.

Old broken or abandoned pipes make a fine highway for rats between the street or sewer and the basement; they must be stopped permanently with cement, if they can't be got rid of otherwise. The same must be done with openings around and within electric wire conduits. Chimney flues may convey electric wires, which rats like nothing better than to climb.

If rats have found refuge between ceiling and the floor above, this harborage can be destroyed only by removal of the entire ceiling. Defects or breaks in walls must be repaired; unfinished walls completed. Boxed toilet bases should be removed and solid foundations installed. Boxed plumbing should be opened up. Shelving and counters must contain no inclosed dead space. Food bins must be rat-tight, with close fitting covers. Dead space beneath show windows must be opened up or be rat-proofed by accurate construction. Remove all accumulated rubbish. Screen lower ventilators in elevator shafts with galvanized iron-mesh wire cloth.

Non-rat-proof buildings are all frame structures, with or without basements, and generally without foundation, floors and walls impervious to rats. Most buildings are of this class and they represent the principal obstacle to be overcome in the rat-proofing of cities and towns.

All such buildings should be remodeled and constructed with brick or concrete walls; but since the area wall in such cases is only for rat-proofing the foundation need not be disturbed, the area wall being erected just within (preferably) or without and against the old foundation.

This area wall should be of brick, stone or concrete, not less than 6 inches thick, extending not less than 18 inches beneath the surface of the surrounding soil, and upward until flush with the under surface of the floor above.

Should the building rest on a brick or concrete foundation an additional wall will not be required; but care should be used to see that the foundation wall extends entirely around the building. Wherever lacking in this respect or otherwise defective, the building should be repaired.

If floor joists rest on the top of this wall it should be continued upward between such joists until flush with the under surface of the floor above.

The ground areas or basement floors of such structures and upper floors and roofs, must go treated as for new buildings, being espetcially careful that the additional rat-proofing requirements are employed when such buildings contain foodstuffs.

Most rats can usually be caught under the front steps; remember this when remodelling.

Wooden floors, whether covering yards, sidewalks, or passage ways, when lying close to the ground, offer easy access to rats and form a convenient port in any of the storms to which rats are liable. Such wooden floors should be removed and the ground area left bare, or covered with gravel cinders or cement.

Rat food is just waste food or food refuse such as is thrown carelessly in vacant lots, or around garbage cans, or into such cans that are imperfect, or surplus food intended for chickens, or dropped in transportation or handling. The imperfect garbage can provides the most important rat food supply in the community; which cannot get rid of the rat until the imperfect garbage can be replaced.

Rats can, by the means here described, be kept out of people's houses. But if a town wants to get rid of rats (which, being driven out of rat-proof houses, will all the more populate the non-rat-proof dwellings) a perfect garbage can system must be installed. This is a civic necessity.

Chicken yards offer a fine source of rat food; such yards should be either rat-proofed or abandoned. You can rat-proof a coop or chicken enclosure by means of an area wall as described for frame structures; the ground area being covered with three inches of concrete and the side walls above the foundation constructed of wire cloth not less than 20 gauge nor greater than one-half inch mesh, to extend upward at least 6 feet. Chickens may range in the open yard, but must be fed only within the rat-proofed coop.

DIRTY PEOPLE AND DIRTY TOWNS.

The reason we have so many dirty towns is because there are so many dirty people. Some towns smell bad, but in such the inhabitants smell bad first. No town is in itself bad, it is the people who are bad. The town is a mirror. It reflects the people. A man who is clean in mind will be clean in person, he will have a clean front yard and a clean back yard.

A littered dooryard and a dilapidated house reflect a littered and dilapidated mind.

If an over-running outhouse borders the alley, it is because the instinct of decency and cleanliness is wofully absent in the owner or tenant, or both. The old proverb "Cleanliness is Next to Godliness," was changed by Governor Thomas Marshall to "Cleanliness is Essential to Godliness." No cleanliness, then of course, no Godliness. A dirty town is an ungodly town.

Some towns, yes many towns, have flies on them. They have flies on them because they are dirty. They are ungodly for that very reason.

A town may have several churches and many church-going people, but if it is dirty and stinks, it is ungodly. "By their works ye shall know them." Of course, how else can they be known? I sat on the porch of a house in a certain town one summer evening. It was hot and sultry. Every once in a while a gentle movement of the air would bear foul odors to my nose. It was the nearby outhouses I smelled. What kind of people are they who have such surroundings? Are they strong-minded and clean? Think of people so disposing of their sewage as to poison the air and also make it possible for flies to transport unspeakable filth to their food. Why shouldn't such people have typhoid fever? They invite it, don't they? Surely, every man is the architect of his own misfortunes. Foul outhouses and flies spell typhoid. Why have them? The answer is simple. They who have them are not of a high order of mentality. They are weak in righteousness and impractical.

Shall the dirty be compelled by law to be clean? No indeed, not unless their dirtiness threatens the health and comfort of others. The scripture says, "He who is filthy let him be filthy still." Of course, what is the use to do otherwise. Compelling "he who is filthy" to be clean in person and premises, will not make him clean in mind and soul. He'll be filthy still. We must teach cleanliness to the unclean. Then if they become clean and stay clean, it is because cleanliness is in their nature. If they stay dirty, it is because they are inherently dirty. Force won't change them. The reason we cannot make a silk purse out of a sow's ear is because it is a sow's ear. It is not silk. A naturally dirty man cannot be made into a clean man. It is because he is a dirty man. It is an iron law of nature that only those may be saved who can accomplish their own salvation. Dirty towns will exist just as long as dirty people exist. Dirty towns will disappear when clean people predominate. Slow town will always have flies on it.—*Indiana State Board of Health.*

THE LEISURE HOUR.

HISTORY, PHILOSOPHY, FICTION, HUMOR, SATIRE, POETRY.

LEISURE HOUR WAS FOUNDED IN THE BELIEF THAT THE PHYSICIAN IS BUT HUMAN; THAT HE LOVES THE BEAUTIFUL IN THOUGHT AND SENTIMENT AS EXPRESSED IN LITERATURE, AND THAT HE IS AT TIMES SURFEITED WITH TECHNICAL MATTER. SHORT, CRISP CONTRIBUTIONS ON ANY OF THE SUBJECTS NAMED IN THE SUB-HEADING ARE INVITED TO THIS DEPARTMENT.

THE FOURTH NEVER MORE GLORIOUS.

IN the ten years ending with our last Independence Day forty thousand of our boys and girls and little children, as much as ten regiments, have suffered or died in those crazy mediaeval, heathenish celebrations of ours; and what must have been the holocaust in the six score years preceding! The deaths have been mostly from lockjaw and from dresses catching fire, whilst many of those who have not died have been dreadfully mutilated, crippled or disfigured for life—the faces of pretty little girls hideously distorted, blinding, eyes blown out, whilst others have recovered with minds so wrecked that they had far better have met death at the time of their infection or their maiming. For a number of years the *Journal of the American Association* has been agitating against this wickedness. But up to 1909 its presentments made little impression; indeed there was much adverse printing about molly-coddles and lack of patriotism. Here is a specimen; "Boys like noise; let them make all they please. As long as the Fourth of July makes a supreme roar from the Atlantic to the Pacific, so long is the United States still young enough to hold its own, still young enough to think new thoughts." In 1909 a Boston journal disapproved the "drastic course" pursued in some cities as likely to cause a "popular reaction." The noisy Fourth served a useful purpose as "a safety valve; and it is unwise to sit hard on any such safety valve." They were for a shooting, whoop-er-up Fourth, in Boston. So that municipality warmed up and let the world know they were tumultuously alive—to the tune of five deaths and 167 people injured whilst three human torches served for a fitting illumination, and recalled those mad bad days when Nero fiddled and Rome burned. They've learned a thing or two since in Boston; for last year they had no deaths but 16 injuries.

Well, the aforesaid medical Journal, having an altogether adequate grasp of the psychological principles of emphasis and repetition, kept sticking to its annual job until other agencies "took holt" in what pretty much everybody now concedes is the right spirit: the non-medical press (notably the *Chicago Tribune*) began to make copy of the reprints that were distributed by their esteemed professional contemporary; in the pulpit sermons were preached, especially on the Sunday preceding the Fourth. Associations, leagues, committees of men eager for human welfare, and of women pitying little children, began to take notice; and governments, both civic and state, have been seeing the light and have one after another been acting accordingly—a most important fact this latter, because the whole problem, duty and responsibility of converting a Slaughter-of-the-innocents Fourth into a Safe and Sane Fourth must in the last analysis be met by the constituted authorities, especially in cities. For the employment of death-dealing agencies is in America subject to municipal regulation. The result of this agitation has been that for 1912 there were in the whole United States: 41 killed and 947 wounded, as against 466 deaths and 3,983 wounded ten years ago. Another good thing is that formerly there were disastrous fires occasioned by our dunderheaded Independence Day proceedings; whereas last year our smoke eaters spent the day in comparative and blessed

desuetude. The greatest decreases were in states where the agitation for prohibitive as compared with restrictive measures has been strongest. Of Alabama, Florida, New Mexico, The Carolinas, South Dakota and Maine no casualties whatever have been recorded.

In other years hospital lists of casualties came back filled; last year they were returned with but a few names or with the story "No cases this year; this city has had a sane Fourth." There were seven cases of lockjaw in 1912 as compared with 392 cases a decade ago. The lockjaw (tetanus) antitoxin, which almost absolutely prevents this terrible disease when employed within 24 hours of the accident, has no doubt helped to bring the record down to six fatal cases of this disease in our country in 1912. The agencies conducive to lockjaw have been, in the order of the frequency: blank cartridges fired from toy pistols, the giant firecracker, the toy cannon, firearms, powder igniting. Last year there were these Fourth of July deaths not due to lockjaw: nine from gunshot wounds; 8 burning to death from fireworks; 7 from powder bombs, torpedoes, etc.; 2 from giant firecrackers; 2 from cannon; 7 from blood poisoning, the explosion of chemicals, etc.

Baltimore was probably the inaugurator of the Safe and Sane Fourth with her ordinance that " no person shall cast, throw or fire any squib, rocket, cracker, torpedo, grenade, or other combustible or explosive preparation within the city; Detroit, Denver, Minneapolis, St. Paul, Louisville soon followed suit; and pretty much every community in the land is likely to do the same this year.

And the new style Fourth is no longer a day of terror but instead of happiness and recreation for everybody, with no remorseful aftermath, and just as much patriotism as was ever evinced. The celebrations now are of music—of bands and of choruses drilled weekly beforehand by skilled leaders, and the singing of national airs and popular songs. There is generous display of dear Old Glory, which connotes the surer development of civic rightousness and better citizenship, in place of the rowdyism which has of recent years been rather rife in our cities.

THE GOOD CITIZEN.

The Good Citizen does not keep a dog. He does not wear side-whiskers. He keeps his children in the country or in the attic.

His conversation in the cars is not punctuated by the words "deal," "ten thousand dollars."

On the cars he doesn't stare at the poor woman's purse.

He does not act so religiously on Sundays that his neighbors hasten to embrace paganism.

He does not furnish his boy with an air-gun and with letters-of-marque to prey upon the lives of his neighbors' children.

He rightly mistrusts his own boy more than any other boy in the street.

He never stands in the door of the elevator.

He does not run to you with trumped-up falsehoods about your boy.

Such is the Good Citizen. It is unnecessary to repeat, of such a man as this, that he does not keep a dog.—*Puck.*

WISDOM FROM CHINESE WOMEN.

She is dead indeed who walks around with a dead heart.

If you listen to the advice of every one the picture will never be straight on the wall.

Let thine purse and not thine eyes tell thee what to buy.

You cannot expect the looking glass to reveal more than you put in it.

Mother and father first and wealth after.

Mother's love is even in beasts, for the hungriest tiger will not eat its whelps.

Another few months of the underworld on the stage and vice will become a greater bore than virtue has ever been supposed to be.

Mrs. Murphy was getting the supper for the children on Saturday night when a young woman came to her door.

"I'm a collector for the Drunkard's Home," she said. "Could you help us?"

"Come around to-night and I'll give you Murphy," said the housewife as she went about her work.—*Life.*

NUGGETS.

(From *The Sowers* and *In Kedar's Tents*, by *W. S. Merriman.*)

Charity—This is an age of societies, and far from concealing from the left hand the good which the right may be doing, we publish abroad our charities on all hands. We print in a stout volume our names and donations. We even go so far as to cultivate an artificial charity by meat and drink and speeches withal. When we have eaten and drunk, the plate is handed round, and from the fullness of our heart we give abundantly. We are cunning even in our well-doing. We do not pass around the plate until the decanters have led the way. And thus we degrade that quality of the human heart which is the best of all.

The charity broker, the man who stands between the needy and the giver, giving nothing himself, and living on his brokerage, sitting in a comfortable chair, with his feet on a Turkey carpet, in his office on a main thoroughfare.

Who lies down with dogs gets up with fleas.

The barriers serve to indicate where we must pass.

The wise are those who ask much, and then take half.

No one can be wiser than destiny.

It is only up to the age of twenty-five that men imagine themselves to be rulers of the world.

When a woman loves a man she makes or mars him—there is no medium.

A Russian forest in winter is one of Nature's places of worship. There are some places in the world where Nature seems to stand in the presence of the Deity; a sunrise at sea, night on a snow mountain, midday in a Russian forest in winter. These places and these times are good for convalescent atheists and such as pass as unbelievers—the cheapest form of notoriety.

You women can do with us men what you like; but you must catch us while we're young.—*John Boyle O'Reilly.*

"A Watchword of the Fleet," by Alfred Noyes, in the Yale *Review.*

For purposes of recognition at night, a small squadron of Elizabethan ships, crossing the Atlantic, adopted as a watchword the sentence, *Before the world—was God.*

I.

They diced with Death. Their big sea-boots
  Were greased with blood. They swept the seas
For England: and—we reap the fruits
  Of their heroic devilries!
Our creed is in the cold machine.
  The inhuman devildoms of brain.—
  The bolt that splits the midnight main
Loosed at a lever's touch; the lean
  Torpedo: "twenty miles of power";
The steel-clad Dreadnoughts' dark array!
  Yet . . .we that kept the conning tower
Are not so strong as they
  Whose watchword we disdain.

II.

They laughed at odds for England's sake!
  We count, yet cast our strength away.
One Admiral with the soul of Drake
  Would break the fleets of hell to-day!
Give us the splendid heavens of youth,
  Give us the manners of deathless flame,
  The ringing watchwords of their fame,
The faith, the hope, the simple truth!
  Then shall the Deep indeed be swayed
Through all its boundless breadth and length,
  Nor this proud England lean dismayed
On twenty miles of strength,
  Or shrink from aught but shame.

III.

Pull out by night, O, leave the shore
  And lighted streets of Plymouth town,
Pull out into the Deep, once more!
  There, in the night of their renown,
The same great waters roll their gloom
  Around our midget period;
  And the huge decks that Raleigh trod
Over our petty darkness loom.
Along the line the cry is passed
From all their heaven-illumined spars,
  Clear as a bell, from mast to mast,
It rings against the stars:
  Before the world—was God.

The past does not die; it only sleeps, and we carry it with us through life, slumbering. Those are wise who bear it gently, so that it may never be aroused.

JOIN THE "DON'T WORRY CLUB."

By Ralph Wait Parsons, M.D.,

Greenmount, Ossining, New York.

I suppose there are few things in our daily existence which cause so many shadows to fall across Life's pathway as unnecessary worries.

It is a matter of experience that most of us have cares and responsibilities that we are called upon to endure, some of which seem to be, at times, almost more than we can bear.

However, generally speaking, it is not the ordinary cares and duties of life that we feel so burdensome to us, for we have gradually grown accustomed to them and have learned by daily experience how to cope with them; but it is the little, petty worries that we permit to annoy and vex us, that, only too often, leave ineffaceable impressions, both upon the disposition and character. It is then, these unnecessary worries, as has been already observed, that not infrequently impair our health and happiness, while they also tend to materially diminish our usefulness in life.

Not only are there indubitable evidences of the baneful effects that worrying has upon the mind and character, but there is the furrowed brow, the anxious and fretful mien, and, at times, the prematurely silvering hair, which betoken the inroads that undue mental agitation has upon a once comely, or perhaps beautiful face. "Some one has said that 'a woman cannot choose, whether or not, she will be beautiful at twenty, but it is her own fault if she is not beautiful at fifty.'"

Temperament is an important factor as to how different persons are affected by worry. Some individuals are either endowed with, or have inherited, a calm and sanguine disposition; they carry their cares and perplexities lightly and burdens that would be thought by many to be intolerable, are borne by them with unfailing equanimity. These are the people, who with Marshall P. Wilder, go "Smiling around the world." On the other hand, there are persons who are of a melancholy and highly nervous disposition, who have, unfortunately, cultivated the habit of worrying about almost everything, either real or imaginary. This habit of worrying has developed so insidiously that they scarcely realize the serious influence it is having upon their character, until they become victims of a morbid mental process, which is a source of unhappiness and distress, both to themselves and to those about them. Indeed, there are those who take a morbid satisfaction in conversing with any one who will listen to them concerning the number and variety of the worries which beset them. Again, there are those who take a weird sort of comfort in borrowing trouble. Thus, if her child is found to be suffering from a mild attack of tonsilitis, the mother immediately says, "Oh, I am sure he is going to have diphtheria." Or a child is suffering from a mild intestinal disorder accompanied by a slight fever, and the mother says, "I am sure he is going to have typhoid fever." Still another mother on seeing her child sustain a rather hard fall, exclaims, "Oh, I am sure he has broken his arm." Not only do such gloomy forebodings tend to make the mother unduly anxious and nervous concerning the little sufferer, but they also tend to frighten and demoralize him.

It will thus readily be granted that the harboring and brooding over the petty worries of life, with the resulting harmful effects upon both the mind and the body, is a matter worthy of serious consideration. Just as a grain of sand which gets into the bearings of a watch will damage its delicate mechanism, so unnecessary worries, when they are permitted to control our minds, and to cast shadows over our daily lives, tend to cause changes in the character which we, sooner or later, cannot fail to deprecate and which only the most strenuous efforts may serve to rectify. In other words, the habit of worrying, when it has been long indulged

in, is difficult to overcome, but efforts at self-control with a view to suppressing impulses to worry unnecessarily, will do much to favor a more hopeful state of mind. Friendly warnings should be given to those who begin to manifest the tendency to worry unduly, not to permit themselves to become annoyed by trifles and insignificant happenings, even if they are of a somewhat trying nature, and they should be urged and encouraged to obtain the mastery over their unstable emotions, in order that they may ultimately possess due self-poise and self-control when times of real anxiety and adversity come upon them. Thus having acquired the requisite calm and equanimity of disposition and having endeavored to cultivate the faculty of "Looking on the bright side," they will be duly qualified to become members in good standing of the admirable and honored "Don't Worry Club."

HOW IT FEELS TO BE PRESIDENT.

SOME day after I am through with this office I am going to come back to Washington and see it. In the meantime I am in the same category as the National Museum, the Monument, the Smithsonian Institution, or the Congressional Library, and everything that comes down here has to be shown the President. If I only knew an exhibition appearance to assume—apparently I can assume other appearances that do not show what is going on inside—I would like to have it pointed out so that I could practice it before the looking-glass and see if I could not look like the Monument. Being regarded as a national exhibit, it will be much simpler than being shaken hands with by the whole United States.

"And yet, even that is interesting to me, simply because I like human beings. It is a pretty poor crowd that does not interest you. I think they would have to be all members of that class that devotes itself to 'expense regardless of pleasure' in order to be entirely uninteresting. These look so much alike—spend their time trying to look so much alike—and so relieve themselves of all responsibility of thought that they are very monotonous, indeed, to look at, whereas, a crowd picked up off the street is just a jolly lot—a job lot of real human beings, pulsating with life, with all kinds of passions and desires."—*President Wilson, at a dinner of the National Press Club, in Washington.*

AT THE END OF THE ROAD.

This is the truth as I see it, my dear,
  Out in the wind and the rain.
They who have nothing have little to fear—
  Nothing to lose or to gain.
Here by the road at the end o' the year,
Let us sit down and drink of our beer,
Happy-Go-Lucky and her Cavalier,
  Out in the wind and the rain.

Now we are old, hey, isn't it fine,
  Out in the wind and the rain?
Now we have nothing, why snivel and whine?
  What would it bring us again?
When I was young I took you like wine,
Held you and kissed you and thought you divine—
Happy-Go-Lucky, the habit's still mine,
  Out in the wind and the rain.

—*Madison Cawein.*

SO SAY WE ALL.

Though they affirm
A deadly germ
  Lies in the sweetest kiss,
Let's hope the day
Is far away
  Of antiseptic bliss.
To sterilize
A lady's sighs
  Would simply be outrageous.
I'd much prefer
To humor her,
  And let her be contagious.

—*By a* GAZETTE *subscriber, a doctor, too, who coyly prefers to remain anonymous.*

Eldest-born of powers divine,
Blessed Hygeia, be it mine
To enjoy what thou canst give,
And henceforth with thee to live.

—*Cowper.*

BOOK NOTICES.

THE INTERVERTEBRAL FORAMEN. An Atlas and Histologic Description of an Intervertebral Foramen and its Adjacent Parts, by Harold Swanberg, with an Introductory Note by Prof. Harris E. Santee. Illustrated by 16 full-page plates, none of which have ever before appeared in print. Chicago Scientific Publishing Company.

An interesting study and of valuable assistance to neurologists. Profusely and accurately illustrated as a guide to those doing spinal surgery.

SUGAR AND SALT—FOODS OR POISONS? By Dr. Axel Emil Gibson, 520 Chamber of Commerce, Los Angeles, Cal. This is an important essay. The food-value of sugar is not sufficiently appreciated; it would "pay" the head of any family to look into that matter. And of course no human, any more than any other animal, can live without salt. Dr. Gibson writes most engagingly.

LECTURES ON DIETETICS, by Max Einhorn, Professor of Medicine at the New York Post-Graduate Medical School and Hospital and Visiting Physician to the German Hospital, New York. $1.00. New York, Paul B. Hoeber, publisher.

ALL physicians can write prescriptions for drugs. How many can prescribe diets? In these lectures the physician will find a masterful exposition of the principles of diet and nutrition, the digestibility of foods, diet in health, in acute and in chronic diseases, diet regimes and so forth.

PHYSICAL TRAINING, two volumes: a junior and a senior course, by E. John Lolano, Indianapolis, Ind., The Brooks-Merrill Co. These excellent books have been adopted by the British War Office. Physical training, by gradual and easy steps, is important during the formative period of childhood and adolescence. The fundamental principle of the Lolano system is a progressive system of gymnastic exercises properly supplemented with recreative games; here is the basis of the "Junior Course." The "Senior Course" will certainly be advantageous to those who would be strong, healthy and alive to the joy of living.

ROCHESTER AND THE MAYO CLINIC, by George Broome Wiley, M. D. The Shakespeare Press, New York City. It was the Mayo Brothers who, as everybody knows, put Rochester, Minnesota, on the map. Dr. Broome tells us an entertaining, fair and unbiased story calculated to aid physicians to greater cures and larger incomes. A book that will accomplish these things is certainly worth having; and Dr. Broome appears to us to have made good.

FIRST AID DENTISTRY, by E. P. R. Ryan, First Lieutenant, Dental Surgery, U. S. Army; 80 illustrations; $1.25 net. Philadelphia, P. Blakiston's Son & Co. This excellent book is for medical and dental practitioners and students; for nurses; especially for hospital corps men of the military and naval service; and for all who are called on to give relief from dental pain, when a dental surgeon cannot be found.

A WAY OF LIFE and MAN'S REDEMPTION OF MAN, by William Osler. These two addresses are printed in two volumes, neatly boxed. Paul B. Hoeber, publ., 69 E. 59th Street, New York; $1.00 net. The first of these addresses was made to Yale students; the second is a "lay sermon" delivered in Edinburgh. Both are scientific, wise and most entertaining reading.

You never can tell. Many a man with lots of dough isn't well bred.

Spicy conversation should be handled gingerly.

Constant use will wear a thing out, even the constant use of a friend.

A prude is generally a young woman who knows entirely too much.

Some men seem able to govern themselves by nature, and others get married.

Troubles come disguised, as well as blessings. Many a chaperon has developed into a matchmaker.

There are times when the quitter and the fellow who never knows when he is licked envy each other.

NURSING DEPARTMENT.

EDITED BY FRANKLIN W. BARROWS, M. D.

THOUGH WIDELY DIFFERING IN FUNCTION, THE ULTIMATE AIM OF THE NURSE IS THE SAME AS THAT OF THE PHYSICIAN, THE RELIEF OF SUFFERING AND THE SAVING OF LIFE. CULTURE, HELPFUL INFORMATION AND A BETTER UNDERSTANDING OF RELATIONS, LEADING TO AN INTELLIGENT CO-OPERATION IN THIS COMMON AIM, ARE THE OBJECTS OF THIS DEPARTMENT.

HEAT STROKE AND FRENZIED THERAPEUTICS.

THERE is some foundation, of course, for the common belief that serious disorders require heroic remedies. There is, however, always a limit to human endurance, and no matter how great the emergency which requires prompt and decisive treatment we should always place gentleness first and foremost among our guiding principles. Who has not seen a poor sufferer half dead from some sudden injury handled with a roughness that threatened the remaining spark of vitality which some well meaning blunderer was trying to restore?

Gentleness first. It is a rule that you will never regret following even though sometimes your treatment may seem lacking in speed and strength. Even though you must act quickly, your act must be preceded by thought. Be sure you are right, then go ahead, even if you have to go ahead the very next moment.

Gentleness first. The victim of a harrowing accident may also be a sufferer from some chronic disorder and your rough and ready "first aid" may really add the finishing insult to his poor body. Bad enough to have a weak heart plus the shock of some sudden catastrophe, without having added to it the extra hazard of "emergency care" by some athletic hero who holds the record for punching the breath out of all contestants.

Heat stroke, now unfortunately coming into season, is an example of a fearful accident that requires prompt but *considerate* handling. There is no doubt that many a poor sufferer from this accident has met his death as a direct result of the treatment generously administered by his frenzied friends. Dr. Simon Baruch is authority for the statement that "plunging an individual suffering from heat stroke into an ice bath will often prove fatal if the heart is weak, while a bath at faucet temperature will frequently result in saving life."

When you meet your next emergency case do not spare any pains to give the sufferer a fair chance; but before you "go the limit" in your ministrations use milder measures and take a moment to consider what sort of a person you have as a patient and what degree of "treatment" he is likely to endure.

ORGANIZED NEIGHBORLINESS—"A STUDY OF EFFICIENCY."

OUR readers are most fortunate in having the opportunity to study the paper by Mr. Richards M. Bradley, of Boston, which we present in this issue and the one following. It is in line with the efforts which we have been making consistently for years past to inform the public on the great problem of efficient home care for the sick, especially in families of moderate means. While other oracles are even now urging our philanthropists to raise vast funds of money in order to *give* to this class of people the highest grade of skilled nursing at the prevailing prices, we commend to the attention of the public this plan of Mr. Bradley by which an efficient service is being offered them at prices which they are willing and able to pay. Mr. Bradley approaches this problem from the business point of view, and has studied out a plan by which an adequate supply is furnished to meet a constant demand. It is a problem similar to many others which our laymen are continually meeting and solving in a business like way. As professional people, engrossed in our own professional duties, we need the co-operation of the business expert who knows how to conduct the markets to the mutual advantage of the buyer and the seller. Let us accept the help which the writer of this paper offers us and take another step in finding our way out of the perplexing situation which the nursing profession occupies to-day.

DANCE AND LIVE LONG.

Now that dancing is in vogue everywhere and all the time, we read with interest the words of Dr. G. Stanley Hall which were reported in the GAZETTE for June 1904. Was Dr. Hall speaking with prophetic insight into the next decade? Whether or no, he should be pleased with the way in which his doctrines are being exemplified after the lapse of ten years. This is a part of his pronouncement as quoted by us then:

"It is probable that man gets nearer his lost paradise when he is dancing than at any other time.

"All muscular effort is in rhythm, the action and the reaction, but the climax of all rhythm is dancing—not dancing as it is known now, but dancing as it was done years ago. If a person is tired, he should dance a minuet; if apathetic, something faster.

"Dancing has great curative power. The best thing, the great thing, is health, which means holiness. The best kind of happiness is the happiness of being alive, and that is the spirit of the dance.

"I can't understand the apathy of some people. Men at fifty, sixty, seventy, and eighty ought to dance when there is dance music. Why, how can they help it?"

TANGO THERAPY.

DANCING is an inspiration and a stimulus, not only physical but social and cultural. So speaks Dr. G. Hepburn Wilson, in *Health Culture*. It is somewhat novel to find this medical man prescribing the dance for such physical maladies as cardiac degeneration, gastric debility and other disorders characterized by "lowered vitality." What is more to the point, the doctor gives his reason, and the therapeutic indications for certain forms of dancing. The tango is in greatest favor to "massage away adipose deposits hampering the heart action," and otherwise rejuvenate a failing organism.

In following Dr. Wilson's enthusiastic recommendations one is inclined to wonder if there is such a thing as too much dancing, for even the "tired feeling" that results from over exertion seems to side-step the dancer so to speak. Our doctor affirms: "The matter of fatigue is important; it deadens the mind and muscles, and creates depression; but while fatigue in gymnastics is usually depressing, the fatigue in dancing is inspirational."

On with the dance! Let the tango be unconfined. The poet and the doctor agree for once. Here we have rhythmical therapeutics in a form that is social and "inspirational."

TREATMENT OF MOSQUITO BITES AND BITES OF OTHER INSECTS.

TIMELY warning and advice on this burning question may save our readers from considerable loss of time and especially sleeping time during the summer outing. The following useful suggestion, which we have proven true, comes from Dr. Patrick Maloney, in the *Journal of the American Medical Association*:

"The bites of mosquitoes and various gnats, the stings of wasps, bees, etc., have often produced a considerable amount of pain and discomfort, and even death has resulted as a consequence of suc hstings in human beings. For some time past I have used iodine crystals in saponated petrolatum, 30 to 40 grains to an ounce. A few drops of this is rubbed over a mosquito bite with magical effects. I have also rubbed it over parts stung by wasps of various sorts and sizes. The pain of the sting was very quickly relieved."

Other suggestions worth repeating are found in the *Munchener Medizinische Wochenschrift*:

Common remedies employed to prevent bites of insects and mosquitoes are camphor, peppermint oil, lemon juice, the oils of tar, eucalyptus, and lavender, creosote, carbolated vaseline, etc. Camphor is very effective but generally too volatile, and the following ointment is usually to be preferred:

Ol. Caryophylli	5.0-10.0 Gm.
Adipis Lanæ	30.0 Gm.
Ungt. Glycerin	ad 100.0 Gm.

If applied in the evening the characteristic odor is still apparent in the morning. The only disadvantage is that some patients will complain of headache. Better results have been obtained by K. F. Hoffman with the tincture of Persian Insect Flowers which possess the advantage of being almost odorless. Bites may be aborted by the application of ammonia. Later, menthol or thymol, in 3- to 5-per-cent. solution, are excellent. Where there is apt to be friction from clothes, a collodion solution is often preferable:

Menthol	0.2 Gm.
Terebinth, Laric	
Ol. Ricini	aa 1.0 Gm.
Collod.	18.0 Gm.

A more permanent relief from itching may be obtained if naftalan be rubbed into the skin over the affected area.

From London comes a very pleasant prescription for the relief of the distress caused by wasp stings:

"Since wasps, lemons, and hot weather are three things commonly with us at the same time, the news that the juice of a lemon is an excellent cure for the sting of a wasp will be welcome. A correspondent in *The Daily Mail* gives the experience of a visitor at a Homburg hotel who was severely stung by a wasp. A waiter produced a lemon, and the instant the juice touched the spot all pain ceased. The application of lemon juice was continued at intervals for ten or fifteen minutes, and nothing more was felt of the sting. Again in another instance the same man was stung on the hand, but the application of lemon juice wrought a perfect cure before one lemon was exhausted. The correspondent adds: 'The remedy is so sure and so simple that it ought to be widely known, and lemon juice can be applied to the lips, the mouth, and even to the throat, and when applied near to the eyes it is quite harmless as, although if a little lemon juice is squirted into the eye it produces considerable pain, there is no possible danger of permanent injury to the sight.'"

HOW TO USE FLOSS SILK.

D. W. Barker, D. D. S., Brooklyn, N. Y., offers these very useful directions for cleaning the teeth with floss silk. We quote from his article in *Oral Hygiene,* and endorse his idea that such advice is much needed.

"For many years I have taught my patients the following simple method, which, if followed, has proven entirely satisfactory. Pass the thread entirely around the tooth, get it well down to the neck of the tooth, cross the ends in front, draw it tight, and then pull first one end then the other thus wiping the entire circumference of the tooth. Treat each tooth separately, doing it before a mirror at first until familiar with the operation. When giving my patient the first lesson I use a black thread so it may be seen easier."

IMPRESSIONS OF AN AMERICAN NURSE IN TURKEY.

Missionary physicians and nurses are usually far removed from the strife and competition that occupy so much of the time of those of us who remain at home. Work is plenty with them and their problem is to find more workers. Their experiences are marked by a freshness and enthusiasm that many of us would like to find in our own little fields. Miss Ruth Tavender, who left a prominent post in the Hahnemann Hospital, Worcester, Mass., for the far off city of Aintab, Turkey-in-Asia, writes an entertaining letter to the *Worcester Telegram,* from which we borrow a few paragraphs:

"Aintab is a big city for this part of the world; population of 80,000, three-quarters Turks, Moslems, and the rest Armenian, Gregorian, with a handful of Americans thrown in. It is a typical eastern city, so more experienced travelers tell me, and is full of dirt, donkeys and dogs. The Koran forbids killing the latter animals and they are plentiful, of a yellow mongrel breed.

"The streets are narrow, paved with big, uneven stones, and the gutters run along the center.

"The camels and donkeys amble along, their drivers' thoughts apparently miles away and the poor pedestrian has to scramble to avoid being knocked down.

"From a little distance, the whole thing is attractive. We rode horseback to the top of one of the near hills, and the minarets, white walls and covered bazars make an unusual picture.

"The buildings are of limestone, white-washed, and are all enclosed with walls. Ours at the hospital are about 15 feet high and two feet thick. The windows are always heavily barred, because of robbers from the mountains. The city police here are a farce. They go about at night, banging a big stick and blowing a shrill whistle, to scare off the robbers.

"Beside the hospital there is the girls' seminary, boys' orphanage and one for girls, all in charge of Americans with Armenian assistants. The buildings are all of good size, with plenty of room and good equipment. The hospital now has 60 beds and there is a new wing being built to accommodate 60 more. Dr. Sheppard is the chief

here and the only American besides Dr. Hamilton, a woman.

"The natives are stoical about pain. They say 'kismet' and let it go at that. The cases are consequently pretty bad when we get them. We are just swamped with work, but the worst of it falls on the surgeon. Think of how our young men at home are just crazy to operate and have to be content with scrubbing up. Then see the amount of work here waiting for some one with heaps of nerve, energy and skill. Can't you inveigle one out here? He'd love it if he cares anything about the work.

"The doctor does the work of three men and with it all he is a keen sportsman, goes hunting once a week, rides horseback as if he never did anything else, and is one of those kindly men with a laugh like a boy's. He needs a helper badly to come and work into his place. The salary is waiting for some ambitious young man, but it would take a couple of years for a new one to work in, and longer to win the confidence of the people to anywhere near the extent that Dr. Sheppard has.

"If you could see the poor beggars waiting for the chance to see him, and bringing their children to him—he is like a father to them. He is absolutely fearless, rides all over the country alone, has been held, tied to trees, and well, all kinds of things have happened to him. I love to get him talking about his adventures.

"Mails from home are very irregular because of the awful conditions of the roads. There are few really good roads, often just a track across fields and when it is rainy, the mud is something beyond description. You don't know mud there. I never dreamed that it could be as it is here, both in quality and quantity. But post days are big times in spite of delays.

"There is a splendid set of people here, workers, every one, no time for foolishness of any sort. When they get started they are well worth listening to. During the massacre here four years ago these men and women went about their regular duties, making a great show of confidence to keep the natives from panic.

"The experience that we meet with traveling about over the country and in big covered wagons like the prairie schooners of our West, would fill books. There is so much that is interesting and different, and I can say with Tom Sawyer, that it 'ain't no slouch of a job.'"

ORGANIZED HOME CARE FOR THE SICK.

BY

Richards M. Bradley, Boston, Mass., Trustee of The Thomas Thompson Foundation.

Address delivered in Buffalo, N. Y., Mar. 21, 1914.

It is my privilege to bring before you an outline of a general plan of community organization for the care of sickness in the home, which it is hoped you may find of service in your undertaking to make social and civic betterment one expression of the faith that is in you.

The reason why I believe this matter will appeal to you as an opportunity of service, is this: Many of you have come to realize that, while great calamities by flood, fires or pestilence, rivet the public attention and set the people to demanding remedies, our greatest losses nevertheless come from the individual disasters that strike one home here and another there, crippling and destroying us in detail. We lose more in the aggregate by such things as tuberculosis and industrial accidents, than by fire, flood, conflagration, and pestilence.

Into the small homes throughout the land comes disaster through sickness, and cripples or destroys those homes. The aggregate amount of these disasters is vast, and a large part of them can be prevented or helped by better organization in our communities for mutual aid. Such organization is needed not on the basis of charity but on a civic basis of local organization to help our homes through their tight places.

I come here in the hope that you will lend the aid of your zeal, brains and money to the formation of a unit for the efficient handling of sickness in the homes of all the people, that will do pioneer work for the cities, towns and country neighborhoods of your land. There is much money to be got for pulling people up when they have fallen into a condition of helplessness and dependence. The work and money that will keep them from falling down will give ten times the value for one-tenth of the cost, and I hope you will devote some of your time and money to that purpose.

Within the last year two careful convasses have been made in this State covering an aggregate population of 17,000 people and embracing varieties of locations from the east side of Manhattan to Hill townships of scattered farm houses in Duchess County. There are two districts covered in Manhattan one on the east and one on the west side containing a little over 5,000 inhabitants. There were three farming townships in Duchess County and in the same county one village of 2,000 people and a ward of Poughkeepsie which happened to contain some of the most prosperous as well as some of the poorest and a due proportion of families commonly described as in moderate circumstances.

Duchess County generally contains the residences of some of the wealthiest men in the country and many of its residents are among the most able and public spirited. If therefore conditions were found as they have been found in this district showing grave defects in our methods of caring for the sick and helpless it is to be attributed not to any individual delinquency of that particular district but to some radical defect in our methods of meeting the problem and back of that to something that is out of order in our mental and spiritual attitude with regard to our duty to our neighbor.

If within a few years it has been possible that a woman go through the perils of childbirth with no attendance whatever in a house only a few minutes away from the residences of two or three of the richest men in the country and within easy reach of numerous other good citizens who are both God-fearing and generous; if such things as this could happen, it has not been because the people of this community were different from the rest of us Americans but because something within us is asleep, and because there are great forces capable of working for good that are unused and unorganized.

These canvasses were made largely from house to house, such houses as could not readily be reached being covered by enquiries at neighbors, physicians' offices and other sources of information. The enquiry was intended to find out over a reasonably large field exactly what had happened to the people in the way of sickness and what means had been taken to meet the exigencies and emergencies that sickness had brought about. The reason for making this enquiry was as follows:

We are coming more and more to distrust the results obtained in social and philanthropic work from individual and isolated agencies, and we are coming to feel the necessity of finding what bearing the individual effort has upon the whole situation and what relation that effort should have and does have to the other forces that are working in the same community. We are coming to realize that in social efforts we are all in the same boat and that no oarsman can properly pull as if there were no other man pulling at the same time. If our hospitals for instance are taking good care of only a small percentage of our typhoid and pneumonia cases, while a large percentage of all the cases in the community receive utterly inadequate care or no care at all; then no matter how well these few cases are cared for we must respectfully call attention to the 80 or 90 sheep in the wilderness and give some of our aid and backing to those of our shepherds who want to get out after them.

If, moreover, owing to the utter lack of facilities for giving proper care in the home, our hospitals and asylums are crowded with patients that need not and often should not be there to the exclusion of cases that need hospital service and need it desperately it is then time for us to get together and get after the proper and comprehensive organization of home care both for the sake of ourselves and our hospitals.

If our cities are filled with hospital trained nurses waiting for jobs, if only our wealthy and our paupers get graduate nurse service while the great bulk of our people and the most valuable part of them must either be ruined by the cost of sickness or else put up with casual, imperfectly trained and often irresponsible service, then it is time for us to get together and see if we cannot make better and more business like use of the great mass of good material that we have to the benefit of all concerned.

Among the things found in the course of these canvasses which point to the above indicated conclusions are the following: A canvas of the cases of confinement in a community is one of the most useful to make for there is generally very little dispute as to the main symptoms of the case. The emergency is likewise one that can be foreseen and the methods taken to meet that emergency give a good indication of what the people of the community are doing to give proper care to the helpless in time of need. Out of 113 cases cared for in the homes of the Duchess County field of enquiry only one had the continuous care of a graduate nurse, 30 had the continuous care of practical nurses, only 18 had graduate visiting nurses, 7 had practical visiting nurses, 11 had midwives, 40 had merely the doctor and family, and 6 had no doctor and no care except the family. In addition to this there were 13 cases cared for in the hospital, chiefly due to a special exceptional endowment in one of the towns canvassed.

There was the strongest evidence that much of the care given was unsatisfactory and inadequate, and that many of the women were forced in a few days to take their daily occupations in a condition that made future trouble almost a matter of

certainty. This I will remind you was the condition in a part of your state where it is by no means backward or remote, and is probably similar to conditions existing over a large part of the country.

The New York City canvass showed that in one district 92% and in another district 98% of the maternity cases were cared for in the homes and the average time of confinement was 9 days, undoubtedly indicating that a large number of cases were kept from work for very much less than this period.

This New York City report shows among other things that in spite of New York's great hospital facilities, even in such serious cases as typhoid fever and pneumonia, 70% of the deaths from typhoid took place at home and 85% of the deaths from pneumonia.

Out of all the 17,000 population covered by these canvasses only 13 4-10% of the cases received hospital care, 86 6-10% being cared for at home. In Duchess County practically all of the numerous cases of infectious diseases distributed their germs from the home, the county being apparently entirely devoid of public isolation facilities.

Perhaps I have wearied you with too many figures but my object in giving them has been to show that we cannot meet the exigencies that exist in any community including your own by hospitals alone or by graduate nurses alone but that we shall have to use both our hospitals and our graduate nurses in co-ordination with other organized forces if we are to make any pretense of handling the whole problem of sickness. The problem is one of vast proportions although it is harder to realize than are many lesser ones, because it represents continuous conditions and scattered troubles.

When disaster comes into the small homes of the country striking now here and now there, destroying or crippling one after another, we hardly notice it, although the aggregate loss may be 100 times greater than that coming from some flood or conflagration that opens our hearts and our pockets. We are a people that thinks more easily in head lines than in statistics.

I think however that there are many of you who do realize how great and important a problem this is and that I can possibly help you in meeting it by describing the attempt made to meet it in Brattleboro, Vermont, and the general plan of action that has resulted and has been applied elsewhere.

I will say that the same method has subsequently been tried in larger communities and that the evidence appears to be conclusive that it meets successfully the wants that exist in sickness wherever there are independent families of moderate means whose requirement is good service without high charges.

Brattleboro is a town containing several manufacturers and is likewise an agricultural centre, thus possessing a peculiarly representative population. Its people are mostly neither very rich nor very poor, and although there are no peculiar advantages to make life exceptionally easy, there are at the same time very few families belonging to the permanently dependent class.

Probably five-sixths of the people in the United States, in country and city, are much the same kind of people and have practically the same problems as most of the people of Brattleboro, Vt. They are people who want the best chances available to do for themselves and their families. They welcome and make use of all schemes for mutual aid and civic advancement, such as schools, libraries, savings banks, fraternal orders, and other insurance facilities. They believe in generous civic and educational endowments open to all on an equality, and believe in the mutual help which neighbor gives to neighbor, and equal gives to equal.

They are people, however, who have very little use for those forms of charity which the generous and prosperous accord to the down and out, but on the contrary ask for themselves and their families merely a reasonable opportunity to remain outside of the down and out class, together with a fair and equal chance to work for the prizes of life.

I was given charge of a fund available for use in that community and I undertook the task not as a professor of medicine or philanthropy, but merely an ordinary business man whose regular occupation is the care and management of real estate. As was natural, I turned a considerable part of this fund to the relief of trouble from sickness, and that is how I got involved in this problem.

A visiting nurse was started and a hospital was built and supported, which turned out graduate nurses from the training school.

These institutions did excellent work so far as they went and seemed on their face to be the proper and usual prescription for meeting the needs of this and other communities.

When the task of establishing them was completed, I waited with natural satisfaction to observe the results and was surprised and disappointed to find that much of the relief expected was not produced. I was sure of this, for I happened to be in a position where I could get an exceptionally good idea of not only the many cases that were relieved by these agencies, but also of the many which were not and could not be so relieved. Without troubling you with details I will try to give you an idea of what I found there and what was found elsewhere by the canvasses of which I have told you.

From eighty to ninety-eighty per cent. of the serious cases of illness (the rate varying with the localities) are cases cared for in the home and not in the hospital, and only a limited portion of these home cases can have their needs met by the work of the visiting graduate nurse, since these cases call for continuous and not intermittent service in the home. This leaves the great bulk of the cases requiring continuous care in the home to be cared for either by private graduate nurses at from 21 to 25 dollars a week, which is obviously impossible for everybody under present conditions, or by such other care as the families, generally unaided by any existing organizations, can get hold of.

Most of this, of course, has nothing in it of original discovery, it is only too well known that outside of visiting nurse work, modern advances have done nothing, or less than nothing, except in a medical and surgical way, for the average family in case of sickness in the home. This is the general condition and this was also our local problem to which I will return in describing our attempt at a solution.

We had the following resources:

A hospital that could take care of some of our cases of illness, visiting nurses that would do for a certain additional number of home cases, and graduate nurses who were available for some of the remaining home cases. There were, however, a very large number of home cases that could not afford a graduate nurse, and an additional number for whose needs the graduate nurse did not answer whether there was money to pay her or not.

To meet this situation we decided to start an office that would be open at all hours to the call of any family in difficulty through sickness, whose needs could not be met from the sources already mentioned.

We resolved to find out exactly what the needs of those unsupplied families were and to search for the workers who were best fitted to meet those needs with economy and efficiency.

The office, you will understand, was not designed to render financial aid, but was simply a neighborhood organization intended to meet, on a business plan, the physical problems and difficulties coming upon a family on account of sickness. Its original organization was of the simplest, consisting of a secretary with a telephone in her home, backed by a committee of women representative of the homes to be served.

Its task was not to provide any prescription that the families in trouble ought to want, but simply to find what the family that had sickness *did* want and what it was up against when its needs were not met by the hospital, by the visiting nurse or by graduate nursing.

This brings us down to the question of what *are* the needs of the average family in sickness, and marks the point where scientific nursing in this country and in some parts of Europe went off the track when the woman wishing to learn the business of a nurse was taken out of the home for the necessary scientific training in the hospital. This training was essential but the touch with the home and its needs, which was equally essential, was unfortunately lost. This was the fault of no one in particular but was due to the circumstances. The new kind of nurse trained in the hospital and understanding the scientific principles of nursing came into sudden competition with the old-fashioned nurse who was the product of the home and understood its needs. They did not appreciate each other's virtues and failed to co-operate.

In looking into the actual needs caused by sickness in the home, we find that we have to deal not only with the patient, but with the family including the patient, and with the household organization that keeps the family going.

As our hospitals themselves by their social service bureaus have now found out, the patient is not an isolated unit, nor a one dimension proposition. The housewife and mother confined to her bed by illness

or childbirth cannot possibly be treated successfully unless she knows that her home is being kept in order and that her children are properly fed and cared for.

It is evident therefore that the kinds of labor involved in caring for sickness in the home must vary from the most skilled and scientific nursing to the work of children's caretakers, cooks and chore boys. With some cases it happens that a good, efficient houseworker or children's nurse is a more important agent for cure than the most skilled hospital graduate. It is evident that failure to accord equal importance to one element with the other, is like maintaining that one of your feet is less important than the other for standing on, and then trying to dispense with it.

Upon the recognition in practice as well as theory of this fact depends the proper solution of the problem of handling sickness in the home.

But to return to our work; our office at first confined itself to this household problem. The town was searched for the various kinds of labor that could watch by the sick, tend children and do chores. During the first year about a thousand days' useful work was done at a net cost of two or three hundred dollars, the cases practically carrying their own costs.

Soon, however, we found that the problem was not so simple and that the most important technical questions of nursing were inextricably interwoven with the most ordinary but none the less most vital household problems.

We therefore sought and obtained the services of Miss Charlotte Macleod, who after building up an important training school for nurses in Massachusetts, had taken charge, under Lady Aberdeen, in starting the Victorian order of Nurses in Canada.

She combined nursing knowledge and experience of a high order with a still higher devotion to the general service of humanity.

The result of the working together of these two elements,—the women's committee understanding the home problem, and the nurse understanding not only this but the nursing problem,—was to evolve what we have not often had before in this country—an office with a working force using the co-ordination of labor of all kinds in rendering service to the homes in sickness, and taking the needs of the home, including the patient, as a starting point.

We found that where continuous care was needed, that continuous care was often not necessarily the continuous care of a graduate nurse. While in some cases, or during certain acute periods of sickness, the continuous service of the graduate was needed, much of the continuous service needed was household service, with occasional help for the patient, such as could best be rendered by women trained to supplement the graduate nurse and perform that service.

We thus gradually evolved an organized working force, in a development that is as yet far from complete. Our force is as follows:—

Under the general superintendent is a visiting nurse doing the usual visiting nurse work, and a supervising nurse who has under her a squad of household nurses or attendants. In addition to this, there is a directory and employment agency of graduate nurses at one end of the list, and at the other end a miscellaneous list of all the people in the town who can go out to help by the hour, day, or week.

What we are undertaking to do is to get all of these forces to work together, supplementing each other in co-ordination, with the object of producing the most effective service at the lowest practicable cost. This is nothing but the old principle of co-ordination of labor, used in every workshop since the most ancient days, here applied to the care of the sick. Why it has not been commonly done before with nursing is explained as I have stated. Educated trained nursing is such a new thing that it has not yet got adjusted to ordinary working conditions. We have had competition between various kinds of nursing forces instead of co-ordination, and we need to have applied to this problem the same plain business sense that has built up our ordinary industries, by using various kinds of labor in co-ordination, and getting the more technically skilled and trained workers to instruct and help out the others.

There are, of course, an infinite number of examples to be shown of the working out of this method, but one of the most simple and common is the confinement case, handled as follows:

When the labor begins, the supervising nurse is summoned with the doctor, and we thus make sure of her special skill during the crisis. As this nurse has cases running into the hundreds in the course of the year, she has the best chance of being well

up in her business and it is often an invaluable aid to the doctor, even if he is an old hand at the business, to have such a woman at his elbow in any of the vital emergencies that often arise during childbirth.

After the birth when the nurse goes away, having made mother and child as comfortable as possible, she leaves a perfectly fresh assistant, whose duty it is not only to look after mother and child, but to see that the household goes on as usual,—breakfast got, children started for school, etc. The case is then carried through by the continued work of the assistant in the house, directed by means of regular visits by the supervising nurse, who continues to do any services that may require her special skill and knowledge.

Here we have co-ordination of labor, and a confinement case is put through at a service cost of perhaps $25, to $35, including the care of home as well as patient. The student of efficiency and economy will have to remember that, if the mother had gone to a maternity hospital, the home would have had to be carried on just the same.

There are plenty of similar illustrations but I can here give you only a very brief and incomplete description of the development of this work and of its nature, and of how an office can be evolved that is prepared to ask the vital question, "What kind of help do you need," and is then equipped to supply that need, at a reasonable cost.

There are various other aspects of this kind of work that will occur to one and another of you such as the following:

Such an office open night and day to the call of a neighbor's distress can do much not only for the family in trouble, but for general community efficiency.

The foreman of a workshop finds that his best workman is missing some morning, and things at the shop go wrong. This is repeated, and the man is in danger of losing his job. When they come to find out, there is sickness at home and he cannot get anybody to help; he really cannot get away. But with the nursing service office to call up, matters are different. The workman can go to his job, knowing that there is somebody that he can rely on to help him out at home. With efficiency here, there is saving not only for the family, but for the whole community. It is not the highest efficiency to organize your shops for work without organizing for the home so that the workmen can get to the shops.

The efficiency of the home, or rather the potential efficiency of the home, in sickness, may be shown by a very different case in another town.

A small hospital had been established by us where good service was being given, costing, including capital charge, three or more dollars a day, per patient. After it had been going for some time, I heard of the following case in a home only a short distance away:

A man was mortally ill with heart complaint; his wife did not want to send him from home to die, though they were ready to take him into the hospital, nor did he want to die out of his home. Any of you would feel the same way. You know a home, even a small one, is a pretty good place to die in, when your time comes. So week after week that woman had held him in her arms through the nights while he fought for breath, and had carried on the home through the day practically unaided, until the end came.

What was the service which that little home needed? Was it the three or more dollars a day hospital service that we had offered, or was it just that plain service in the home that, without straining this wife to the breaking point, would have enabled her to have her husband die in his home and in her arms?

There is a side to this case that appeals to the heart, but please do not let this keep you from looking at the side that appeals to the head. There is no reason why the hard headed business common sense of our business people should carefully avoid spending a little of itself on efficiency in care for the sick, merely because such work has the misfortune to be called philanthropy. What we were attempting to do for this case lacked the element of common business efficiency, and therefore failed. We were offering something for three dollars that these people did not want, instead of something for one dollar that they wanted, and wanted badly, namely: plain household service to relieve the wife and enable her to give her strength and time to her husband in his last hours. What would the head of a business house say to a similar procedure by one of his salesmen?

Now I do not wish to be misunderstood in this matter. There are plenty of uses for the hospital; there are plenty of cases that must go there and that are better there; no community can do without good hospitals. You will have need for every dollar that you can raise for hospitals properly

situated. What I wish to bring before you is this: *You cannot get the full efficiency out of your hospitals unless by organizing you get the full efficiency out of your homes.* It is a plain case for an all around study of economy and efficiency.

Unless you are well organized for reaching the home when sickness first comes, the right cases will not get to the hospital in time; the right cases for the home cannot be properly handled there, but will have to crowd the hospital, and remain there longer than would otherwise be necessary. Moreover, when the hospital has served its purpose and the patient is ready to return home and make room for the next one, the work of the hospital will be lost unless the home conditions can be made such that the convalescence can end in health and not in helplessness.

I would advise anyone who has not a hospital already going in his town, to organize the home service first. Then we can know what the whole problem of sickness is. We can tell how much of a hospital is needed, and we will be equipped to use our hospital to the best advantage when it comes.

Perhaps one of the most definite ways of conveying to you the kind of work done by this office, is to give a list of the occupations of the breadwinners in the families served, and to have you understand that all but a very small percentage of the labor costs of this work was paid for by the people themselves, and that a small percentage was paid for by agencies outside of the nursing office.

The breadwinners' occupations were, farmer, gardener, bank clerk, machinist, operative in organ shops, overall factory operative, milliner, fireman, painter, cutter, sheriff, tailoress, domestic, chair factory operative, janitor, lawyer, real estate agent, salesman, baseball player, teacher, veterinary, boarding house keeper, carpenter, junk dealer, assistant editor, teamster, printer, general secretary, laborer, brakeman, Standard Oil Company employee, mechanic, electrician, and nurse. Of all these heads the farmers were the most numerous.

I have given you here chiefly the point of view on this subject of the community and the householder.

There is in addition, however, the point of view of those who serve you in sickness, —the physician and graduate nurse, and also the so-called practical nurse.

There is no more trying dilemma for the doctor than to have to choose between recommending what is not adequate for the patient and what is too expensive for the home to afford. A cheaper and more efficient nursing service offers some relief from this.

(*To be concluded in July* GAZETTE.)

NON-MEDICAL ANESTHETISTS.*

By Lawrence Irwell, M. A., B. C. L., Buffalo, N. Y.

The Congress of Surgeons which recently met in Chicago, urged the enactment of State laws which will require physicians to have five years' experience before being allowed to practice surgery, etc., etc., but not one word was said concerning the qualifications which an anesthetist ought to possess. The explanation may perhaps be found in the fact that very many surgeons know little about anesthetics and never study the subject, yet in some instances in which the patient is a bad surgical risk the administration of the anesthetic needs quite as much care as the work of the surgeon. A certain Philadelphia surgeon uses a nurse as anesthetist, and professes to have great confidence in her ability. Nevertheless, when his patient is in poor condition for an operation, he does not allow this nurse to give the anesthetic, but substitutes a physician. Why does he do this? Either because he is afraid of legal proceedings in case of the patient's death on the table, or because, despite his professions he has little confidence in the nurse's knowledge of anesthesia. There is no doubt that some non-medical persons can be taught to give general anesthetics with safety, and there is also no doubt that some men could be taught to perform surgical operations without taking a complete medical course. But both the art of surgery and the art of administering anesthetics are specialties in medicine, and patients are not properly protected when amateurs are allowed to pose as specialists on surgery or on anesthetics.

*Reprinted from the *New York State Journal of Medicine.*

Deaths from anesthesia are more common than any statistics show. In the first place, unless the patient dies in the operating room, no death certificate ever gives anesthesia as the primary cause of death. Secondly, shock as a primary cause of death sometimes means an incompetent or inexperienced anesthetist. The idea that a nurse can become as safe an anesthetist as a medical expert is not correct, notwithstanding the boasts of certain persons residing in Rochester, Minnesota. She can become as good an anesthetist as it is possible for a person without medical education to become, and that is all. Very many nurse-anesthetists are deplorably ignorant of physiology, and few of them know what acapnia means. Yet death from acapnia is far from impossible. Any one who has ever seen any anesthetic administered by a medical specialist and the same anesthetic given later by an interne, or a "specially trained nurse," knows what the difference is to the patient—not only the chance of death on the table, but the extent of the post-anesthetic suffering. Concerning the latter point, an investigation at a St. Louis hospital, where two thousand patients were anesthetized by a medical specialist and the same number by internes, showed statistically that post-anesthetic nausea and vomiting are trivial when a medical specialist has administered the anesthetic compared with the extent of both forms of suffering after an interne has dropped ether onto the mask. The managers of this hospital do not employ any nurses to do physicians' work, and the administration of anesthetics is, both legally and medically, a part of the practice of medicine; it is not a part of the practice of nursing.

The need of legislation in this State (New York), specifically providing that the administration of any general anesthetic, even in the presence of a physician, constitutes the practice of medicine is, in my opinion, proved by two facts: First, deaths from anesthesia occasionally occur in cities where the services of competent anesthetists are always available. Inquiry sometimes shows that the case was one of childbirth in which the nurse was permitted to give chloroform as a complete anesthetic, not a few drops as an analgesic. In other cases investigation shows that a surgeon employed a "specially trained nurse" as anesthetist, sometimes for a "private" patient, without having even mentioned to that patient that by paying a small additional sum, seldom over $25 (and outside New York City considerably less), he could be anesthetized by a medical specialist. Secondly, nitrous-oxide-oxygen is now being used by a few surgeons as a routine anesthetic. For short dental operations it is comparatively safe, but for major surgery it has proved much more dangerous than ether, even in the hands of some medical specialists of great experience. Dr. Gatch, for example, has had three deaths out of 2,500 administrations. How many Dr. Teter, the Cleveland dentist, has had, I do not know, and he may not have had any for some years. I should, however, like to see his statistics with all dental operations excluded. He is the "medical" anesthetist at some Cleveland hospitals. The special need for legislation is this: At a certain hospital in Cleveland, Ohio, nurses are being "trained" to become "specialists" in the administration of nitrous-oxide-oxygen. The so-called "training" occupies from four to six months, at the end of which period these nurses are allowed to pose as experts in the art of administering nitrous-oxide-oxygen for surgeons, and some of them are "practicing" outside the State of Ohio. As a well-educated physician cannot become an expert anesthetist in six months, to pretend that a nurse, with her meager training in physiology and very little indeed in pathology, can become a safe administrator of N_2 O + O in that short time is nonsense, of course. Further, more than two years ago the Attorney-General of Ohio gave an opinion that the administration of general anesthetics by non-medical persons in the presence of a registered physician is unlawful in Ohio. The hospital in question, however, still continues to use nurses as anesthetists and to "train" other nurses to become "specialists in nitrous-oxide-oxygen anesthesia." Such "specialists" are a danger to the community; there is no popular demand for them in New York State, and the legislature ought to protect the public from them by passing a very brief addition to the Public Health Law providing that the administration of any general anesthetic constitutes practicing medicine. The midwife practices medicine legally, but she is, in my opinion, a detriment to the public. The nurse anesthetist, upon the other hand, is doing what the legislature never intended to permit her to do. Even with the existing law she could probably be indicted, but conviction is far from certain.

Legislation prohibiting physicians from doing surgical work before becoming surgeons may be desirable if constitutional, but it is not nearly as necessary at present as is legislation that will effectually prevent nurses from practicing a specialty in medicine without a medical education, but with the connivance and assistance—and sometimes for the special benefit—of surgeons, some of whom know very little of the real dangers of any general anesthetic.

Never in the history of the United States has there been a time when the public distrusted the medical profession as much as it does to-day. Never in the history of the country was there a time when quacks were so numerous and so successful in a financial sense. Educated men and women are beginning to learn that the administration of a general anesthetic is a very serious matter, and before many years have passed most people will know something of the danger of anesthesia and its horrible after-effects when given by amateurs to sensitive patients. When that knowledge has become general, the surgeon who uses a nurse to anesthetize his "private" patients who are well able to pay for a medical specialist, can say good-by to his practice, assuming, of course, that the law has not previously interfered with nurses who practice medicine at the behest of and for the benefit of surgeons.

The reader will kindly note that I am not a physician.

HOSPITAL CARS.

The Swiss Federal Railways have added to their equipment several hospital cars, which are intended for conveyance of sick and invalid travellers. The cars are placed at the service of private parties, and being intended especially for long journeys, they are fitted out with all the technical equipment to adapt them for travel over the various European railway systems. Not only is the car fitted to travel on all standard-gauge railway lines of the Continent, but it is designed also for transfer on the Scandinavian and Sicilian ferryboats.

The car is heated by steam. A hot air installation serves to heat up the car when installed or before starting or when travelling on lines not equipped with steam heating. All the compartments of the car are electrically lighted. The dynamo, driven through belt transmission from one of the car axles, also supplies electrical energy for various apparatus with which the car is equipped.

The sick room, which is located on the middle of the carriage, and the adjoining lavatory, are fitted up aseptically in the same manner as up-to-date hospital rooms, all the walls, ceiling and floors, as well as the furniture, being readily washed and disinfected, while all the angles of the walls and ceiling are rounded off and any joints covered over with smooth nickel-plated metal. The floors are lined with inlaid linoleum.

The sick room contains a good bed with iron frame and steel mattress and a removable lifting device. The horsehair mattresses are made in three parts to facilitate disinfection; a chest of drawers fitted into the wall contains several changes of bed-linen. The sick room further contains a bed-table with adjustable plate and iron cabinet with marble plate and enamelled case, an upholstered easy-chair with iron frame and washable leather lining, and a divan also coated with washable leather, the hinging back of which can be used as emergency bed, after covering it with horse-hair mattresses. In addition to a drop-light, there is provided a portable electrical wall and table lamp, whose light can be cut off by means of an inclosing shade. An electrical heating-pan serves to heat the bed. There is, of course, the usual electrical bell call for nurse, and a wall fan for ventilation. The sick room is accessible from outside through broad folding doors in the side-walls, through which the invalid can be brought in on a stretcher or Sedan chair.

Adjoining the sick room are the quarters for the attending physician or nurse. The furnishings here include sleeping accommodation and an upholstered seat covered with washable leather; further a folding table and a metal and plate glass cabinet for medical necessaries, surgical instruments, dressings, &c.

A first-class compartment for the patient's relatives or friends is attached, this also being equipped as a "sleeper."

The kitchen is equipped with an ice box for food and drink and to store ice for

medical use; there is a marble topped table, also a fire-clay sink with self-locking water faucet. Under the kitchen table there is a small chest of drawers for polishing utensils, and on top of the ice box a crockery cabinet, in which the kitchen linen is also kept. The kitchen is operated electrically. Over the kitchen, as well as the lavatory, are arranged water-tanks in tinned copper-plate.—*British Journal of Nursing.*

INSTITUTIONAL LAUNDRIES.

In a recent number of the Zeitschrift fur Krankenanstalten, Herr Klaffke, the superintendent of the Elberfeld Municipal Hospital, writes at some length on the subject of the institutional laundry, approaching the matter from a purely practical point of view. His article is almost exhaustive and teems with informative hints and suggestions. First he deals with the general question of loss and deterioration. We all know how much in private life we suffer from the washerwoman—now more often the laundry machine. The tearing up of cotton and linen goods, the unraveling of mixed material and the general damaging of stiff goods are everyday commonplace grievances which are, however, far more serious in institutional than in private life. That they occur is due commonly to carelessness and want of adequate supervision. In an institutional laundry, properly equipped and staffed, such carelessness is inexcusable. For, as Herr Klaffke shows, nearly every variety of destruction can be prevented by proper care and management. One of the most common causes of indifferent laundry work in English institutions is the use of hard or insufficiently soft water for washing purposes; another equally material cause is false economy in the use of soap. By sparing the soap the material washed almost invariably runs the risk of being spoiled in a greater or lesser degree. We are too prone to look upon soap merely as a chemical means of removing dirt, whereas in these days, when comparatively heavy-working rinsing and mangling machinery are used, a good soap is invaluable as a mechanical lubricant in preventing damage to the linen by ameliorating the action of the rollers. This lubricating action can, however, only be fully secured when soft water is employed; with hard waters a large amount of soap is wasted. Hospital workers in general have no conception of what this waste really means, nor is it easy to express it in figures. But, as a general rule, the experiments at the large Rudolf Virchow Hospital have shown that one part of lime in 100,000 parts of water means sixteen times the amount of soap, so far as laundry purposes are concerned, that is used up in soft water containing no lime. A certain percentage of this loss can be spared by a liberal use of washing soda, but by far the best means of securing economy of soap is by previously softening the water, and undoubtedly the most practical method of softening is the so-called Permutite process. A very interesting point to which Herr Klaffke draws attention is the damaging action upon cotton and linen goods of electric bleaching. Recent experiments have shown conclusively that these methods of whitening tend to deteriorate the quality of the articles subjected to them by as much as fifty per cent. For this reason, when the method is used, care must be taken to employ very weak solutions, to turn the articles frequently so as to insure an even action, and to exercise discrimination in selecting articles for bleaching by this method. The damage done by the use of strong chemical adjuvants, now so frequently used where quick washing is required, is also very great. Soaps containing a relatively low percentage of fat and alkaline soap powders appear to be responsible for most of the damage done in institutional laundries. Where chemical disinfectants are used the damage is much greater, although not in general so apparent at first. Rapid steam boiling, for example, tends to deteriorate the fiber of cotton articles to a small extent; if to the wash water a percentage of an alkaline soap powder is added, this deteriorating effect is markedly increased, whereas if a superfatted soap is used the destructive action is far less.

We do not know of any similar series of experiments to these in English institutions. It would be instructive and interesting, therefore, to have the views of hospital workers who have experience of institutional laundry work on the subject for purposes of comparison. More especially is it desirable to find out what are the most economical and efficient methods of softening hard water employed in our large institutions.—*The Hospital.*

Questions and Answers.

The following answers are not "official." They are prepared for the editor.

VERMONT BOARD OF REGISTRATION OF NURSES.

MONTPELIER, MAY 8, 1913.

OBSTETRICS.

Do not write questions—number them and letter sub-divisions.

Only answer ten questions.

1. What do you understand by the term pregnancy?

Ans. The condition of being with child; gestation.

2. What are the physical signs?

Ans. Changes in shape, size and feeling of the uterus; ballottement; fetal heart sounds; fetal movements; recognition of fetal parts.

3. Define the following: a. Abortion. b. Premature labor. c. Extra uterine pregnancy. d. Placenta previa.

Ans. (*a*) Expulsion of fetus before it is viable. (*b*) Labor before the proper time but after fetus is viable. (*c*) Pregnancy in which the fetus resides in some organ outside the uterus; ectopic gestation. (*d*) Placenta which is implanted over the entrance to the cervical canal.

4. a. How many stages of labor? b. Describe each.

Ans. (*a*) Three. (*b*) The first stage is the period of dilation, beginning with the first labor pains and ending with complete dilation of the os. At this period the bag of waters usually ruptures. The second stage is the period of expulsion, extending from the dilation of the cervix to the birth of the child. The third stage is the placental stage, beginning with the birth of the child and ending with the expulsion of the placenta and the contraction of the uterus.

5. How would you prepare a bed for labor in a private house?

Ans. If possible, have single bed, of medium height and accessible on both sides; the mattress should be firm and flat, yielding as little as possible under the weight of patient. The mattress is protected by a rubber sheet, oilcloth or thick pad of newspapers. Upon this lies a bed sheet. Over this is the draw-sheet or large folded sheet held smoothly in place by safety pins. Above this are placed a second rubber sheet, or other protective sheet, and a draw-sheet, both of which are to be removed after the confinement in order to leave patient in a dry, clean bed. A few dry pads of any absorbent material, about two feet square, should be provided and sterilized beforehand, in order that the patient may lie upon them and protect the bed from discharges.

6. What care would you give the breasts before and after delivery?

Ans. During pregnancy the breasts should be kept scrupulously clean, and free from pressure; the nipples should be soft; if crusted they should be bathed with soap and warm water and anointed with cocoa-butter or albolene; if retracted, the nipples should be drawn out with the thumb and finger several times a day. The breasts should always be protected from injury, and if large and heavy they should be supported from beneath to relieve them from dragging and consequent congestion. During the puerperium the breasts must be washed twice daily; the nipples are swabbed with boracic lotion or sterile water before and after each feed. If the nipple is tender it is anointed with sterile albolene or cocoa-butter. If breasts become heavy they may require support by a properly adjusted binder. The nipples and breasts must be handled as little as possible to avoid infection, and if touched by the hand at all, the hands should first be well sterilized. If nipples become fissured or breasts engorged, further prophylactic precautions will be necessary.

7. a. What is the lochia? b. What are the signs of hemorrhage?

Ans. (*a*) The vaginal discharge following childbirth. (*b*) Paleness of face and lips; cold sweat on forehead, rapid respiration, yawning, rapid pulse; dizziness, faintness, ringing in the ears, followed by restlessness, muscular cramps, unconsciousness and death.

8. What are the symptoms of eclampsia?

Ans. Dull frontal headache, disturbances of vision, epigastric pain, somnolence or insomnia, excitement, vertigo, vomiting,

despondency, diminution of urine, ringing in the ears. Sometimes there is edema of the feet and a tendency to coma.

9. a. What care should you give the eyes of the new born? b. The mouth?

Ans. (*a*) Separate the lids gently and drop into each eye a solution of silver nitrate (1%), or one of the other silver salts used in such cases. (*b*) Mucus should be gently wiped from the mouth with the little finger covered with a soft cloth. If mouth fills with mucus so as to interfere with free respiration the infant may be held head downward for a short time, and mouth wiped again. He should then be given a drink of water.

10. If alone what would you do for secondary hemorrhage from the cord?

Ans. Send for the doctor, and while waiting tie the cord again with a piece of tape, or, with sterile fingers make firm compression over the bleeding point until the doctor arrives.

11. a. What is the best food for babies? b. Give temperature of water for first bath.

Ans. (*a*) The milk of a healthy mother, preferably the mother of the baby. (*b*) From 100 degrees to 105 degrees Fahr.

12. What is the danger of using a glass catheter during labor?

Ans. Danger of breaking the catheter in the urethra during a pain.

Surgical Nursing and Bacteriology.

Answer 10 questions only.

1. Define strabismus, myopia, hypermetropia and ophthalmia neonatorum.

Ans. Lateral deviation of one or both of the eyes. Near-sightedness. Far-sightedness. Purulent ophthalmia of the new-born.

2. What is the safest method of removing a foreign body from the ear?

Ans. Syringe with warm water, inclining the head to the side affected. If body is not dislodged easily, call a doctor.

3. Define fracture, ecchymosis, gangrene, abscess.

Ans. Breaking of a bone. Extravasation of blood and disturbance due to it. Mortification or massive death of a part. "A localized collection of pus in a cavity formed by disintegration of tissue."

4. Define antiseptics, germicides, deodorants. Name one of each, with indications for its use.

Ans. A substance that destroys poisonous germs and prevents decay, as phenol, in aborting boils. An agent that destroys microbes, as steam, in sterilizing dressings. An agent that destroys odors, as formalin, in offensive cancer cases.

5. Classify bacteria according to shape. What conditions are necessary to their growth?

Ans. Bacillus, rod-shape. Coccus spheroidal. Spirillum, spiral-shape. Warmth, moisture, not too much light, and a "medium" containing sufficient food. Some require oxygen and some do not.

6. Define spore, parasite, saprophyte. Name two spore bearing bacteria.

Ans. The reproductive cell of one of the lowest plants or animals. A plant or animal living on a living organism. A vegetable organism that grows upon decaying matter. Bacillus Subtilis, Anthrax bacillus.

7. Describe in detail the various steps in catheterizing a female patient.

Ans. Prepare and sterilize the following: 2 or 3 towels; 6 or 8 gauze sponges or sponges of absorbent cotton; 2 catheters, in boric acid solution; 1 small receptacle for urine; 1 larger receptacle for urine; a hot solution of boric acid; a hot bichlorid solution. (1:2000). Patient lies in dorsal position with knees flexed, and clothing rolled above the waist. One sterile towel is placed on bed below the vulva, another is laid over the pubes. The small receptacle for urine is placed between patient's thighs; when filled it is emptied into larger receptacle. The nurse sterilizes her hands. She stands on the right side of patient. With her left hand she separates the labia widely and with the right hand thoroughly washes the parts around the urethra, using the sponges and the boric acid solution. She again washes her hands. Then, using the left hand as before, she takes the catheter in the right hand and inserts point into urethra, pushing gently until urine flows. As the flow of urine slackens, she withdraws catheter a very slight distance until the flow begins. In removing the catheter the free end must be tightly stopped in

order to retain the urine in the catheter. The vulva is then sponged and dried with sterile towel, and patient made comfortable in bed.

8. Name and describe uses of five positions of patient for operation or treatment.

Ans. Horizontal, for digital vaginal examination. Lithotomy, for access to bladder and rectum. Knee-chest, to correct backward displacement of pelvic organs. Sims' position, for exposing cervix and dome of vagina. Trendelenburg, in pelvic operations, to remove the abdominal viscera from field of operation.

9. What is cystitis?

Ans. Inflammation of the bladder.

10. What becomes of a silk ligature left buried in the tissues?

Ans. It remains unabsorbed, and surrounded by a cicatrix like deposit of new tissue.

11. Define hemorrhage, shock, coma, asphyxia, syncope.

Ans. Escape of blood from the vessels. "Sudden vital depression due to injury or emotion." Profound stupor after illness or injury. Suspended animation as from suffocation. Swooning or fainting.

12. Name four purposes for which enemata are administered.

Ans. Purgation, Stimulation, Alimentation, Application of heat.

University of the State of New York

21st Nurses Examination

ANATOMY AND PHYSIOLOGY.

Tuesday, January 27, 1914—9.15 a. m. to 12.15 p. m., only.

Answer 10 *of the following questions. Each complete answer will receive* 10 *credits. Papers entitled to* 75 *or more credits will deciduous teeth begin?*

1. What constitutes the pulse?
2. Locate and describe the tonsils.
3. At what age does the cutting of the deciduous teeth begins?
4. Name the three membranes that protect and nourish the spinal cord.
5. What is the character of the membrane that lines passages and cavities communicating with the exterior?
6. What is the character of the membrane that lines closed cavities?
7. Describe a cell.
8. Name *three* different channels of elimination by the body.
9. What position do the white blood corpuscles occupy during normal circulation?
10. Which is the pyloric and which the cardiac opening of the stomach?
11. What are glands?
12. Define (*a*) pneumogastric, (*b*) hypogastric, (*c*) epigastric.
13. Locate and describe the patella.
14. Locate the hard and the soft palate.
15. What is protoplasm?

Have your answers to these questions ready for comparison with the answers to be given in a later number of the Gazette.

Practical Nursing and Dietetics. (1) Name three qualifications necessary for a nurse to have. (2) Name three ways of introducing medicines into the system. (3) How would you collect a twenty-four hour specimen of urine? (4) Define the following:—(*a*) subsultus, (*b*) tympanitic, (*c*) dyspnoea, (*d*) cyanotic. (5) How could you improvise a Kelly pad? (6) (*a*) What position would a patient naturally take when suffering from peritonitis? (*b*) Why? (7) State in detail your method of making and applying a mustard paste. (8) In what way does the serving of food affect digestion? (9) How would you make kumyss? (10) Explain the advantage of taking a glass of milk slowly. (11) Why is bread more easily digested when toasted? (12) How is the fuel value of foods expressed?

Kill the Germs and Prevent the Disease.—Communicable diseases come only from the germs of those diseases.

Kill or render harmless the germs and you will prevent the spread.—*Bulletin Buffalo Health Dept.*

Treat Children Kindly.—The barbarous custom of 'hardening' a child by keeping it without shoes or stockings at all seasons is responsible for many of these attacks (of bronchitis).—Henry Enos Tuley, m. d.—*Pediatrics.*

TECHNICALITIES.

Items of value to nurses in their work will be welcome to this column.

Store Cupboards.—To have a tidy and well-kept store cupboard is the aim and ambition of the majority of housekeepers; a cupboard where all the goods are allowed to remain in paper packets will never be tidy, and, of course, nothing will keep well in paper. For rice and other grains which are quite dry close-fitting tins are the most suitable; similar tins are also absolutely necessary for tea and coffee. Moister groceries, especially the soft sugars, are best kept in glass or earthenware; large, wide-mouthed bottles with good corks, like pickle bottles, are most useful for this purpose. Spices are best kept in small glass bottles, with close-fitting glass stoppers. These are somewhat expensive, but are more economical in the long run, as they will last for years; cream of tartar and carbonate of soda should also be kept in these bottles. The name of the article contained in any bottle, tin, or jar should be clearly written on the outside of the receptacle.—*Hospital.*

Daylight Cleanses.—Where daylight never enters cleanliness will be maintained only in rare instances.—*Chicago Sanitary Bulletin.*

Value of Exercise.—Moderate, not excessive, exercise will build up a wall of resistance against bodily foes.—*Buffalo Sanitary Bulletin.*

What do You Drink?—Drink plenty of fresh water. It is the best drink for coolness, comfort and health.—*Buffalo Sanitary Bulletin.*

A Wise Diet.—Regulate your diet to fit the season. Meats and fats—heat producers—for the cold weather; fruits and vegetables for hot weather.—*Buffalo Sanitary Bulletin.*

Ink for Writing on Celluloid.—Dissolve 15 parts of tannin in 50 parts of acetone, and 10 parts of dry ferric chloride in 50 parts of acetone. Mix the two solutions.—*Medical Brief.*

To Keep Away Mice.—There are many objections to the use of poisonous articles to keep away mice. Mice have a strong antipathy to the smell of peppermint, and if you place a little oil of peppermint round their haunts and holes you will successfully keep them away.—"Anglesey," in *the Hospital.*

Bed Bugs.—Hoosain of India recommends equal parts of spirits of turpentine and soap suds, the latter preventing too rapid evaporation of the former and making it stick to the smooth and hard backs of the bugs.—*Buffalo Medical Journal.*

Glycerine for Stoppers.—Do not forget to moisten all your glass stoppers with glycerine the hydroscopic property of which will keep them from sticking in the bottle. A very little smeared around the stopper answers the purpose for a long time in the case of many bottles.—*Od Quarterly.*

Where Do You Eat?—An underground kitchen is frequently liable to be unclean. It is usually under-ventilated and under-lighted. Such kitchens undermine health of the workers and, therefore, underwrite unhappiness, poverty and death.—*Chicago Sanitary Bulletin.*

Water Softening.—To have a good supply of soft water is one of the most important factors in removing the dirt from soiled clothing. Water which contains an excessive amount of mineral salts, such as carbonate or sulphate of lime, is generally supposed to be hard, and if some means be not adopted to counteract this hardness, the soap will form hard curds which float on the surface of the water. In institutions where a special water-softener is not used there are several simple methods of softening hard water which might be adopted. The most satisfactory method is the addition of an alkali—one ounce of washing soda dissolved in boiling water (before using) to each gallon of water; but an equal quantity of borax answers the same purpose, and, while being more expensive, is less injurious to the clothes and hands. Household ammonia is also very good for softening water, and is excellent for washing flannels; half a tablespoonful should be used to each gallon of water. Care must be taken that the water is not too hot, otherwise the ammonia will evaporate.—*Hospital.*

COSTS MOST PER POUND
but has what people want—
QUALITY

Perhaps the one food you have never tried

HOYT'S GUM GLUTEN BREAKFAST FOOD

Extracted from wheat—the protein—the nutty flavor—the part of flour that builds the nerves—makes one feel good.

A pound package mailed on receipt of 25c.

For sale only by the leading grocers.

THE
PURE GLUTEN FOOD CO.
90 West Broadway
New York City

Sherman's Bacterins

Preparations with a Record for
RELIABILITY

40 DIFFERENT VARIETIES

Marketed in Ampules, 6 to a package for $1.50

5 c. c. bulk packages in special aseptic container averaging 8 doses for $1.00.

18 c. c. bulk packages in special aseptic container averaging 30 doses for $3.00.

Sherman's New Non-Virulent T. B. Vaccine

—prepared from a special non-toxic strain of tubercle bacillus. This T. B. Vaccine possesses unusual immunizing and therapeutic virtues, and is sold in 5 c. c. bulk packages for $1.00, and 18 c. c. packages for $3.00.

List No. 44, 100,000,000 organisms per c. c.
List No. 45, 500,000,000 organisms per c. c.

Bacilactic Drains—Persson's

Used as a local treatment in sub-acute and chronic urethritis; 25 treatments for $2.00.

Write for Literature

G. H. SHERMAN, M. D.,
DETROIT, MICHIGAN

The Coward Shoe

"REG. U. S. PAT. OFF."

A pronounced case of fallen arch, photographed in the shoe worn at the time the patient was sent to the Coward Store for attention.

In Treating Weak Arches

and ankles, either in the incipient or advanced stages, careful physicians understand the importance of employing corrective mechanical assistance.

Same foot after being fitted in a Coward Arch Support Shoe; ankle kept upright, arch held in place—weight of body equally distributed.

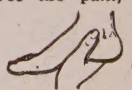
COWARD ARCH SUPPORT SHOES

WITH COWARD EXTENSION HEELS

are of immediate benefit in all cases of structural foot weakness, including "turned" ankles, weak ligaments, falling arch and flat-foot.

Constructed on approved anatomical principles, these remedial shoes provide the needed support, without discomfort to the wearer, or interference with the muscular action of the feet.

The helpful, upward pressure of the Coward Arch Support, rests strained ligaments, relieves the pain, and in many cases effects a speedy recovery.



Coward Arch Support Shoes are of special assistance in treating arch and ankle weakness of growing feet, and are as efficacious in preventing the foot troubles of childhood as in their treatment and correction.

Coward Arch Support Shoe and Coward Extension Heel have been made by James S. Coward, in his Custom Department, for over 33 years.

MAIL ORDERS FILLED
WRITE FOR CATALOG

JAMES S. COWARD 264-274 Greenwich St. (Near Warren St.) **NEW YORK**

Mail Orders Filled **SOLD NOWHERE ELSE** Send for Catalog

TREATISE on "FLAT-FOOT"
MAILED UPON REQUEST

A POWERFUL YET HARMLESS ANTISEPTIC.

So many have within recent memory been the fatal accidents due to bichloride poisoning, that a safe substitute antiseptic should be most welcome, but only in respect of safety is *Chinosol* superior to mercury bichloride; the former product is an instantaneous deodorant, does not coagulate albumin, does no injury to membranes, does no damage to tissues, does not break down granulations, does not irritate and is analgetic. Whilst no one should intentionally take *Chinosol* internally, yet forty-five grains have thus been ingested by an individual without any untoward effect upon him. In a meeting of the Section on Surgery of the New York Academy of Medicine that master surgeon Dr. Robert T. Morris is reported by the *Medical Record* to have made the point (in his paper on *Antiseptics versus Germicides*) that

"bacteria and body cells while simple morphologically, were highly organized chemically, and in the course of evolution had come to be peers of each other in questions of warfare. A balance of nature was maintained between bacteria and body cells of higher organisms under normal circumstances. In cases of a wound this balance was temporarily lost and the surgeon was called to give help. When he employed germicides it was essential to remember that any agent capable of injuring the protoplasm of bacteria was capable at the same time of injuring the protoplasm of body cells and of their agents, the phagocytes. Antiseptics which were not germicides and which did not injure protoplasm of either organism were for the most part preferable. He said that at the present time an immense amount of damage was done by some surgeons, by nurses and house-staffs of hospitals, and by the laity in general when they employed for wound treatment such germicides as bichloride of mercury, carbolic acid, peroxide of hydrogen, and iodine in cases in which the body cells of the individual would do more effective work when not paralyzed by the injury to their protoplasm. There was a place for the employment of germicides, and this required knowledge and skill on the part of the surgeon. Chinosol had a much greater antiseptic power than bichloride of mercury in the same strength of solution, but was not a germicide. We had been deeply imbued with the ideas of the third era in surgery—the pathological era—in which it was considered essential to destroy bacteria and their products. We were now passing into the fourth era of surgery—the physiological era—in which the fundamental idea was to turn the patient over to himself, to give him home rule in the simplest way which would suffice."

Such eminent surgeons as Dr. John B. Murphy of Chicago and Dr. Hennan J. Boldt, of New York, have heartily endorsed *Chinosol,* which, though innocuous, is nevertheless officially reported by the council on Pharmacy and Chemistry of the American Medical Association to be "a powerful antiseptic, somewhat stronger in this respect than mercuric chloride and considerably stronger than phenol (carbolic acid).

COMMON SENSE IN MANAGING DIGESTIVE DISORDERS.

The artificial digestives have their place in modern therapy, but their use should always be tempered with sound judgment. Otherwise conditions we seek to correct are very apt to be aggravated. Undoubtedly we have placed too much reliance on the digestants and as a consequence have often done more harm than good. As one physician states in referring to the digestive functions: "Nature should be gently assisted in the human economy. If we persist in doing its work, like the lazy man, it soon depends on that assistance. This is true to the action of the liver, stomach, intestines, as well as all functions of the human anatomy. How often do we meet with individuals who are habitually dosing themselves whenever an action of the liver or bowels is required, and others who require a dose of pepsin or one of the many artificial digestives after each meal. This is all wrong. The functional activity of the entire process of digestion should be encouraged and any remedy that will specifically stimulate these functions to their healthy action is of greater service in digestion than pepsin. Seng, a remedy that has a well defined secernent action on the glands and mucous membranes of the stomach and intestines, thus compelling the secretion of Nature's own digestive fluids, is the modern treatment for dyspepsia."

"Coffee Paralysis"

is nothing more nor less than the "occupation paralysis" of scientific nomenclature.

Such cases are sometimes spoken of by the attending physician as "coffee paralysis," because, on desisting from the habitual use of coffee, the patient generally recovers the use of hand, arm, or foot as the case may be and its usefulness is regained.

Many ailments are never traced to their true, yet obscure cause—caffeine, in coffee and tea—by oversight in diagnosis.

Why should any doctor ignore the fact that coffee and tea contain an irritating, poisonous alkaloid which may be, and doubtless is, the cause of a long line of insidious troubles which sooner or later develop into serious, if not uncontrollable disease!

It is interesting to note that many physicians in all parts of the country are discountenancing the use of coffee and tea; and are recommending the safe, wholesome, food-drink,

POSTUM

Made of wheat and a small percent of molasses, Postum is pure, absolutely free from any drug, and is in line to avoid what coffee and tea tend to induce.

Postum now comes in two forms.

Regular Postum—must be well boiled.

Instant Postum—(the new form) is a concentrated, soluble powder. A spoonful dissolved in a cup of hot water, with a little sugar and cream, makes a perfect beverage **instantly.**

"There's a Reason" for POSTUM

The **Clinical Record** for Physicians' bedside use together with samples of Instant Postum, Grape-Nuts and Post Toasties for personal and clinical examination, will be sent on request to any physician who has not yet received them.

Postum Cereal Co., Ltd., Battle Creek, Mich., U. S. A.